TRANSACTIONS

—OF THE—

State Board of Agriculture,

STATE OF NEBRASKA.

From September, 1876, to September, 1879.

REPORT

As required by Section 11, Chapter 2, General Statutes of Nebraska, entitled "Agriculture."

LINCOLN, NEB.:
JOURNAL COMPANY, STATE PRINTERS.
1880.


D A K O T A
W Y O M I N G
N E B R A S K A
C O L O R A D O
K A N S A S
Porcupine Tail
Camp Sheridan
Spotted Tail Agency
Red Cloud Agency
Dancers Hill
Saline Lakes
Fresh Water
Scotts Bluff
Chimney Rock
Raw Hide Peak
Bridgerstown
Cheyenne
Archer
Ancient Ruins
Court House Butte
Chapel
Old Julesburg
Fort Sedgwick
Lillian Spring
Riverside Sta
Antelope Station
Denison's
Fremonts Butte
Greeley
Gearys Ranch
St Vrain
Platteville
Johnson
Fort Lupton
Old Ft Morgan
Denver
Box Elder
Buffalo
Pierce
Rocky Ford
Agate
Republican City
Cedar Bluffs
Fairbury
Beaver City
Red Willow
Culbertson
Stockville
Gosper
Phelps
Kearney
Adams
Harlan
Franlin
Webster
Nuckolls
Thayer
Furnas
Hitchcock
Frontier
Chase
Keith
Lincoln
Dawson
Buffalo
Custer
Sherman
Howard
Valley
Greeley
Wheeler
Ord
Loup City
Grand Island
Kearney Jc
Hastings
Aurora
Hamilton
York
Merrick
Polk
Butler
Saunders
Sarpy
Cass
Otoe
Lancaster
Seward
Clay
Fillmore
Saline
Jefferson
Johnson
Nemaha
Richardson
Pawnee
Gage
Marysville
Holt
Knox
Cedar
Dixon
Dakota
Wayne
Pierce
Antelope
Elkhorn
Madison
Stanton
Cuming
Burt
Dodge
Colfax
Platte
Boone
Nance
Douglas
Sarpy
Blackbird
Omaha Agcy
Winnebago
Ponca
Yankton
Yankton Reserve
Niobrara
Verdigris River
Long Pine Creek
Keya Paha River
Niobrara River
Snake River
Elkhorn River
Loup River
North Platte River
South Platte River
Republican River
Platte River
Missouri River
Big Blue River
Little Blue River
Blue River
Big Nemaha River
Little Nemaha River
Nemaha River
Big Sioux River
Vermillion River
Missouri
Iowa
Sioux City
Omaha
Council Bluffs
Nebraska City
Plattsmouth
Falls City
Beatrice
Hebron
Superior
Red Cloud
Franklin
Bloomington
Alma
Orleans
Arapahoe
Holdrege
Minden
Kearney
Grand Island
Hastings
Aurora
York
Seward
Fairmont
Geneva
Fremont
Blair
Tekamah
Decatur
Lyons
Wisner
Norfolk
Madison
Battle Creek
Pierce
Plainview
Wayne
Laurel
Wakefield
Dixon
Ponca
Hartington
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Bloomfield
Creighton
Niobrara
Verdigris
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Logan Valley
Jolna
Dakota City
Homer
Sioux City
Covington
Elk Point
Jefferson
Vermillion
Yankton
Gayville
Volin
Irene
Wakonda
Parker
Canton
Lennox
Worthington
Sibley
Estherville
Spencer
Milford
Orange City
Le Mars
Hawarden
Sioux Rapids
Rock Rapids
Lyon
Inwood
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Rock Valley
Sheldon
Hospers
Sioux Center
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Orange Cy
Cleghorn
Cherokee
Aurelia
Holstein
Ida Grove
Odebolt
Arthur
Battle Creek
Ute
Onawa
Whiting
Soldier
Blencoe
Magnolia
Missouri Valley
Logan
Woodbine
Modale
Pisgah
Mondamin
Little Sioux
Turin
Moorhead
Tekamah
Herman
Oakland
Craig
Uehling
Scribner
Snyder
Dodge
North Bend
Fremont
Ames
Arlington
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Kennard
Washington
Irvington
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Norfolk
Meadow Grove
Hadar
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Coleridge
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Dodge
North Bend
Fremont
Ames
Arlington
Blair
Kennard
Washington
Irvington
Bennington
Omaha
Florence
Fort Calhoun

To His Excellency, Albinus Nance, Governor of Nebraska:

In compliance with law requiring and governing Nebraska State Board of Agriculture, the following report is submitted:

Since the report of 1875, until at the last session of the legislature, there has been, as you are aware, no provision made by which proceedings of the Board could be published. In order that the State may have a corrected record of its agricultural affairs, we have condensed the reports from that date to September, 1879, inclusive, bringing the whole within the maximum limit of two hundred pages, as stipulated by law.

We beg to submit to you, and through you to future legislative assemblies, the advisability of removing this restriction as to quantity of matter to be printed in book form for distribution. The proceedings of adjoining sister States Agricultural Boards and Societies range in extent from four hundred to one thousand pages. Surely they have no more important agricultural matters to present those of their own states, or those at a distance, seeking knowledge aud information relative to the characteristics of the growing West, than has our own State, Nebraska.

The Nebraska State Board of Agriculture is now of such magnitude that its regular and indispensable business proceedings, which the law requires shall be published, consume a very large proportion of the meagre space alotted for the entire annual report. This matter is called to your attention, believing you will agree with its importance, and that you will deem it wisdom, in your coming message, to call direct attention of the legislature thereto.

There are other matters of equal importance to which we would respectfully call attention, especially that of statistics in crop reports. County societies, county officers, or individuals, without legal requirements or pay, are slow to furnish desired

information relating to areas under cultivation, varieties of crops, yields, etc., etc. Limited requirements, it is true, are made of assessors in this respect. But they should be full and complete, embracing all and every product of whatsoever character known to the territory embraced within state boundaries.

The State Board of Agriculture, embracing as it naturally does, all the minor kindred organizations—Horticultural, Dairymen, Stock Breeders, Grangers, Farmers' Clubs and Institutes, is essentially an important integral part of our State organization, and cannot be over fostered or cared for. Those who have for years spent much time and means, by individual efforts to promote the agricultural interests and advancement of our young State, feel they are not asking too much when they claim special attention of state officers and legislators.

The progress of agriculture in Nebraska, and all connected therewith, are of most encouraging character. But for want of space, we might, with propriety, be indulged in more elaborate reference and suggestions. We trust the brief reference made will suffice to anchor a deeper and more lively interest in all that pertains to and concerns the future development and progress of the State—*its agriculture.*

Respectfully submitted,

MARTIN DUNHAM,
President.

DANIEL H. WHEELER,
Secretary.

MEMBERS OF THE STATE BOARD OF AGRICULTURE,

FOR 1879–80.

Members whose Term of Office Expires in January, 1881.	Members whose Term of Office Expires in January, 1880.
D. H. Wheeler, *Plattsmouth.*	J. F. Kinney, *Nebraska City.*
M. Dunham, *Omaha.*	G. W. E. Dorsey, *Fremont.*
J. C. McBride, *Lincoln.*	D. T. Drake, *Crete.*
E. N. Grennell, *Fort Calhoun.*	C. W. Lyman, *Beatrice.*
Charles Mathewson, *Norfolk.*	Theron Nye, *Fremont.*
M. Stocking, *Wahoo.*	Edmund McIntyre, *Seward.*
R. Daniels, *Gilmore.*	J. W. Johnson, *Plattsmouth.*
H. C. Stoll, *Beatrice.*	A. G. Hastings, *Lincoln.*
J. T. Clarkson, *Schuyler.*	Chris. Hartman, *Omaha.*
R. W. Furnas, *Brownville.*	J. W. Jacobs, *Lincoln.*
J. B. Dinsmore, *Sutton.*	Rice Eaton, *Kearney.*
S. Barnard, *Table Rock.*	G. W. Lawse, *Orleans.*
C. H. Walker, *Bloomington.*	Horace Allen, *Clarksville.*
A. D. Williams, *Hastings.*	H. D. Perky, *Wahoo.*

L. A. Kent, *Minden.*

In accordance with Sec. 10, Chapter 2, *General Statutes*, the *President* of each County Society, or *Delegate* therefrom, *duly authorized*, are *ex-officio* members, for certain purposes therein expressed.

OFFICERS.

Martin Dunham, Omaha, - - - - - - - *President.*
C. Mathewson, Norfolk, - - - - - - *First Vice-President.*
R. W. Furnas, Brownville, - - - - *Second Vice-President.*
Chris. Hartman, Omaha, - - - - - - *Treasurer.*
D. H. Wheeler, Plattsmouth, - - - - - *Secretary.*

BOARD OF MANAGERS.

General Superintendent,
Samuel G. Owen, Lincoln.

Assistant Superintendent,
H. B. Nicodemus, Fremont,

Superintendent of Police,
D. Plasters, Brownville.

Superintendent of Tickets,
M. Dunham, Omaha.

CONSTITUTION, BY-LAWS, AND REGULATIONS.

CONSTITUTION.

1. The "STATE BOARD OF AGRICULTURE," for the State of Nebraska, is an orgaization created by law, with perpetual succession, under the provisions of "An act for revising, amending, consolidating, and re-enacting the civil and criminal codes, and the laws of a general nature of the State of Nebraska, 1873," Chapter 2, Section 8, entitled, "Agriculture, and amendments thereto.

2. The officers of the Board shall be a president, two vice-presidents, secretary, treasurer, and board of managers, all of whom shall be members of the State Board.

3. The constitution may be amended or altered at annual meetings by a vote of two-thirds of the members present.

BY-LAWS.

ARTICLE 1. This Board shall hold at least two meetings in each year—one in January of each year, at the State capital, the day to be fixed by the President, who shall advise the Secretary, who shall notify each member of the Board, by a written or printed notice, and one during the Annual Fair.

2. The annual election of officers of the Board shall take place at the January meeting, and the officers then chosen shall hold their several offices for one year and until their successors are chosen and qualified.

3. It shall be the duty of the President to preside at all meetings of the Board, to call special meetings, to select the place for holding meetings, to decide all points of order that may arise, subject to customary rules; to have a general supervision over the affairs of the Board.

4. It shall be the duty of the Vice-Presidents to perform all the duties of the President during his absence.

5. If at any meeting of the Board it shall appear that neither the President, or either of the Vice-Presidents are present, then the meeting may choose a President *pro tem.*, as also in the absence of the Secretary, a Secretary *pro tem.* may be chosen.

6. It shall be the duty of the Secretary to record the proceedings of the meetings of the Board, and to take charge of all documents and papers usually belonging to his office as Secretary; and also to audit the accounts of the Treasurer, and to certify to the correctness thereof, and present the same to the Board annually, at the meeting in January; to transact all business in the interest of the Board requiring transmittal by mail, and shall annually make a report to the President; and the Secretary shall receive a salary of one thousand dollars per annum, payable quarterly, which said sum shall be in full compensation for services as Secretary.

7. It shall be the duty of the Treasurer to receive and receipt for all moneys paid into the funds of the Board, and to hold the same subject to the orders of the Secretary, countersigned by the President; to open an office on the fair grounds during the continuance of the Annual Fair of the Board, and collect all moneys due the Board for admittance, booth rents, etc., under the supervision of the Board of Managers. Previous to the entering upon the discharge of his duties as Treasurer, he shall give bond in the sum of ten thousand dollars to the Board, for the faithful application of all moneys coming into his hands by virtue of his office; said bond to be filed with the Secretary of the Board, with two approved securities; and it shall further be the duty of the Treasurer to submit his accounts, with proper vouchers, in

writing, annually, at least two days previous to the meeting in January, to the Secretary, to be audited and approved by him; and the Treasurer shall receive for such services the sum of one hundred dollars per annum, payable annually.

8. It shall be the duty of the Board of Managers to endeavor to advance the interests of the Board in general, and more especially in their immediate neighborhood, by soliciting those most calculated to promote the interests of the Board, to exhibit such animals and articles at the Annual Fair as would be most likely to result in the greatest benefit to the community; and it shall also be their duty to attend each meeting of the Board, of which they compose a part, and assist in the adoption of such measures as are best calculated to advance the interests of the Board and the public good.

9. It shall be the duty of the Board of Managers to have a general supervision of the affairs of the organization, subject to the order of the Board, when in session, or the President *ad interim*, the law of incorporation, and these by-laws.

10. Five members shall constitute a quorum for the transaction of business at any meeting of the Board.

11. No person can enter articles or animals for exhibition, or compete for premiums, except as provided by regulations.

12. TWENTY PER CENT of all CASH PREMIUMS awarded by the Board shall be RETAINED as ENTRANCE FEES.

13. All animals, implements, utensils, and machinery must be owned by the exhibitor. All agricultural and horticultural productions must be raised by the exhibitor, and be productions of the present year. All articles of domestic manufacture must be made by the exhibitor. Preserved fruits or vegetables must be put up by the exhibitor.

14. All entries at the Annual Fair must be made by 12 o'clock, noon, of the second day, and must specify the name and residence of the exhibitor, and the CLASS and NUMBER of the lot of the premium for which he, she, or they compete. The book for entries shall be open for one week previous to the fair.

Persons living at a distance can, if they prefer, make entries by letter, addressed to the Secretary, stating the articles, the class, etc., in which they wish to compete.

15. No entry shall compete for more than one premium, except the Sweepstakes, besides best display.

16. When the entry of the article or animal is recorded in the books of the Secretary, cards will be furnished with the number and class marked thereon, which are to be placed on the animal or article and will admit them to the grounds free, and the Awarding Committee are *prohibited from changing entries.*

17. When there is but one exhibitor competing for premium, committees may, at their option, award no premium, second or first, as merit may warrant. But *only second* money will be paid in such instances, except in case of extraordinary merit, and then by order of the Board of Managers, after full hearing, examination, and information.

18. Feed will be furnished to those having animals on exhibition at actual cost.

19. All animals and articles must remain in the enclosure during the fair, except by permission of the President of the Board.

20. The reports of the committees awarding premiums must be made in writing, and signed by a majority of the committee, and be handed immediately to the Secretary.

21. These by-laws may be altered or amended by a vote of two-thirds of the members present at any regular or special meeting of the Board.

THE SUPERINTENDENT

22. Shall receive all goods shipped to his care, but they will not be brought on the ground except by the owner or his agent; nor will the Superintendent or the Society, in any case, be responsible for transportation. He will direct exhibitors, on their arrival, to proper departments on the grounds, assign places for

encampment outside the enclosure, and perform such other duties as may be required of him by the President or Board of Managers.

TICKET SYSTEM.

23. All persons, whether exhibitors or not, will obtain tickets for admission to the grounds at the Treasurer's office, near the entrance gates, as follows:

Single tickets of admission .....50 cts.
Children under ten years of age.....Free.
One horse and (private) carriage and driver.....$1.00.
Two horses (private) carriage and driver.....$1.50.
For each person, other than the driver, in any private vehicle (one ticket) .....50.
Admission to "quarter stretch" each day.....25.

Omnibus or vehicle carrying passengers to and from the fair grounds will be admitted to the grounds on such terms as the Roard of Managers may prescribe.

Editors and reporters will obtain tickets of admission from the chairman of the Board of Managers. Those who are strangers will be required to present a written introduction from the proprietor of one of the city papers.

24. Special passes will be given by the Treasurer each day to persons employed in taking care of stock, or employed in booths, on personal application of person owning stock or booth. Transfer of tickets in any or all cases will subject the party to arrest and expulsion of stock, booth, vehicle, and party from the grounds or from competition for premiums offered by the Society.

25. No checks will be given at the gate. Parties going out will have to pay on return.

26. The fair is open to the world, EXCEPT *where otherwise expressly provided.*

27. All committees not on hand at noon of the second day, their places will be filled by the officers and Board of Managers.

GENERAL ARRANGEMENTS.

28. The exhibition will commence on.....and close on.....

The gates will be open at 8 o'clock A.M. of each day, and at that time every officer is required to be at his post.

No disorderly conduct of any kind will be permitted; a police force will be on the ground sufficient to prevent the same, and to see that the rules are observed.

ANIMALS.

29. No animal will be allowed to run at large on the grounds. Every article or animal upon the grounds shall, during the fair, be under the control of the Board; and while every possible precaution will be taken for the safe keeping of the same, the Board *will in no case be responsible for any loss or damage that may occur.*

EXHIBITORS.

30. All horses and cattle entered for competition will be shown in the arena. No person but the Awarding Committee on duty and the officers of the Board will be allowed inside of the arena whilst the exhibition is going on.

31. At the time of making an entry of thoroughbred stock of any kind, the party applying will be required to furnish the Secretary with authentic pedigrees, on the FIRST day of the fair or at time entry is made.

All the entries of thoroughbred or registered stock, of whatsoever kind, must be accompanied with authenticated pedigrees, filed with the Secretary at the time of entry. For horses, Bruce's or Wallace's Stud Book, and for cattle, Lewis F. Allen's American Herd Book, will be considered standard authority, and can be found in the office of the Board of Managers.

The Board of Managers are authorized to examine pedigrees

of stock entered for exhibition, and to decide whether authentic or not, and their decision shall be final.

32. If it be ascertained that any exhibitor has made, or caused to be made, any false statement in regard to any animal or article exhibited; or if any exhibitor shall attempt to interfere with the judges in the performance of their duties, by letter or otherwise, he shall be excluded from competition. Circulars will be considered interference.

33. The exhibition of stock will commence at the time and proceed in the order specified in the programme. Animals not READY *at the proper time and place will be ruled out of competition.*

34. Apprentices entering articles of their own production for competition must furnish, at the time of entry, a certificate from their employers stating their ages and the time they have served in the business.

35. Persons desiring space for the exhibition of articles or machinery not entered on competition, must make the same known to the Secretary at as early a day as possible, and give the name of the article, the name of the exhibitor, his place of residence, and specify the amount of space required. Heavy machinery, or even other articles, may be taken on the grounds at any time before the commencement of the Fair.

ENTRIES.

36. The Secretary will open his office at point where Fair is held one week before the Fair.

37. No entries will be received after 12 o'clock, noon, of the second day. Particular attention is called to this, as it is impossible to give satisfaction any other way.

38. No person will be allowed to see the entries or have access to the entry book until after the awards are made.

39. Entries can be made at any time (until within one week before the Fair), by applicatoin to the Secretary at Plattsmouth. During the first and second days, entries will only be received at the office of the Secretary on the Fair Grounds.

40. Every worthy article not enumerated in the Premium List, which may be presented, will be placed in its appropriate class, and a premium awarded. The Board especially desire the attention of the community to this rule, and hope that all worthy and appropriate articles will be presented for exhibition.

41. When an entry is made of any article the Secretary will give to the party a card, which will contain the number of entry and Class, Lot, and name of exhibitor, and which must be attached to the article.

42. Contrary to the customs of most agricultural societies, the Board have decided that the names of all exhibitors shall be placed on the cards attached to the articles on exhibition. As to do otherwise is not complimentary to committees, and deprives exhibitors of one of the main features of these exhibitions, viz., advertising.

43. Exhibitors will confer a great favor on the officers of the Board by making the entries at as early a day as possible.

44. Persons living abroad can make their entries by letter, but in such cases, if the entry be in live stock, the applicant must give the name and age of the animal, the name and residence of the owner, and the class in which he wishes to enter. If the entry be of machinery, implements, etc., the applicant must give the name and residence of the maker, name of patentee, and name or designation of the article.

45. No article or animal shall be entered in more than one department or class, except Sweepstakes or Display.

46. All entries will be made in strict compliance with the offered Premium List, and awards made in accordance. Parties must therefore take particular pains to have *stock* and *articles entered just as they want them.*

47. Those who propose making entries will very much oblige the Secretary and his clerks, if they will, before leaving home, make a list of all the articles they wish to enter, and the Class and Lot to which they belong, and sign their name in full at the bottom. This will enable the clerks to get their names correct on their books.

Ample space will be provided for those who desire to camp on the grounds.

SUPERINTENDENTS.

48. The General and Assistant Superintendent will have supervision of the grounds. The class superintendents will take particular direction of all articles in their respective departments —that the animals have appropriate stalls and pens, and that articles are conveniently arranged for examination by the judges, as well as to furnish information relative to the exhibition, and shall appoint the committees in their respective classes under the direction and with the consent of the Board of Managers, and report them at once to the Secretary.

49. Superintendents not on the ground and reported to the Secretary by noon of the FIRST day, their places will be filled by the officers and Board of Managers.

50. Committeemen from a distance will report themselves to the Secretary on the morning of the second day.

SUPERINTENDENTS OF POLICE AND POLICEMEN.

51. The Superintendent of Police shall have charge of the police force on the grounds (under control of the Board), and it shall be his duty, with the assistance of his aids, to preserve order throughout.

52. The policemen shall be sworn in as conservators of the peace, and it shall be their duty to arrest any person creating any disorder, or violating any of the Rules of the Exhibition, or Laws of the State.

53. The Superintendent of Police shall detail a suitable number of his force for night service, and any one employed day or night, who shall neglect the particular duty assigned him, or leave his beat without permission, shall forfeit all or part of his pay, as the Superintendent of Police may determine, and no bill

for police services shall be audited except presented and approved by the Superintendent of Police.

54. The Superintendents of the Gates will employ the Gate-keepers, and if necessity requires, it shall be their duty to make arrests in the vicinity of their stations.

TRIALS OF AGRICULTURAL MACHINERY.

55. There will be an opportuntiy for trying plows, both for breaking and stirring.

56. So far as may be, the judges will be instructed to decide on the relative value of machines from tests on the ground; and every convenience will be offered within the reach of the Board to make the contest fair and equitable.

DIRECTIONS TO COMPETITORS.

57. Persons at a distance who desire to exhibit articles, products, or animals, and find it not convenient or possible to attend in person, can send to Samuel G. Owen, General Superintendent, who resides at Lincoln, the place for holding the next Fair, and every attention will be given to them, and the articles placed on exhibition will be returned or held subject to the order of the owner.

REGULATIONS.

RULES AND REGULATIONS TO JUDGES.

1. You will receive your committee books and enter upon the discharge of your duties at one o'clock on the second day. The committee books will refer you to the number affixed to the different animals or articles submitted for your examination. In

these books *you will write your award*, and make your full report on a blank which will be furnished you by the Secretary.

2. *You* will not be permitted to serve upon a committee in any class in which *you* may be *competing for a premium.*

3. Judges will not award any animal or articles a premium, unless in their opinion it is "decidedly meritorious."

4. You may take into consideration the symmetry, early maturing, size, age, feeding, and other circumstances connected with the animals you may judge, but give no encouragement to over-feeding.

5. Three members of each committee will constitute a quorum.

6. Permit no person to interfere in your deliberations. Competitors attempting to interfere with committees will forfeit their right to a premium.

7. Superintendents of departments are *ex-officio* Chairmen of their respective committees, but shall not be entitled to a vote, except in case of a tie.

8. All votes shall be by ballot. The animal receiving a majority of the votes cast shall be entitled to the premium.

9. Each premium shall be voted for separately.

10. In case of a *tie* vote, the Superintendent shall give the casting vote.

11. As appeals from awards of committees are not allowed, the committees will see the necessity of great care in rendering their decisions.

12. Animals entered in one class, or sub-class, shall not compete in another, except in case of Sweepstakes, Speed, or General Display.

13. When an animal is shown in a class to which he does not belong, the committee shall so declare, and the Superintendent will dismiss the animal from the ring, stating the reason therefor.

14. The age of horses shall be computed from the *first* day of January of the year in which they were foaled.

15. Unsound animals shall not be awarded a premium.

16. No entry fee will be charged in any department except Speed Ring.

17. Every rule laid down by the Board will be strictly adhered to, and no exceptions whatever made.

Red Ribbon or card denotes 1st Premium; Blue Ribbon or card denotes 2d Premium.

18. All $2 premiums offered are payable in *Nebraska Farmer* for one year, except where more than one such premium is awarded the same individual. In such instance, it shall be optional with the person to whom award is made, whether more than one copy of the paper be taken.

SHOWMEN, PEDDLERS, HUCKSTERS, ETC.,

will apply to the President of the State Board of Agriculture for privileges.

PROCEEDINGS.

PROCEEDINGS, 1877.—JANUARY.

LINCOLN, January 10th, 1877.

Board met pursuant to call of President and Secretary, notice having been given all members. Present:

OFFICERS, M. Dunham, 1st Vice-President, in chair, 2d Vice-President C. Mathewson, J. W. Moore, Treasurer, D. H. Wheeler, Secretary.

MEMBERS, E. N. Grennell, C. H. Walker, A. D. Williams, Ed. McIntyre, N. W. Wells, J. F. Kinney, N. S. Belden, A. G. Hastings.

PRESIDENTS COUNTY SOCIETIES EX-OFFICIO, Isaac Niles, Cass, M. Dunham, Douglas, J. F. Pugsley, Franklin, C. Mathewson, Madison, J. E. North, Platte, Ed. McIntyre, Seward, N. K. Marsh, Clay, J. A. Baker, Saline.

C. W. Lyman, Gage County, and D. T. Drake, Saline, were excused for non-attendance.

H. C. Addis, Douglas County, Adam Rankin, Dawson, J. W. La Munion, Lincoln, were removed from Board for non-attendance, without excuse.

J. T. Allan resigned.

N. W. Wells, J. W. Moore, Ed. McIntyre, appointed committee to recommend persons to fill foregoing vacancies, as also regular vacancies by reason of expiration of terms of service.

Following resolution by Mr. Hastings, adopted:

Resolved, That all ex-members of this Board, and all Secretaries of County Societies present, be invited to participate in the proceedings of this session.

Committee to report names of persons to fill vacancies in Board, submitted the following list. Report adopted, and persons named declared elected:

M. K. Turner, Platte County, S. C. Carey, Gage, J. T. Clarkson, Colfax, D. H. Wheeler, Cass, M. Dunham, Douglas, J. W. Moore, Otoe, R. W. Furnas, Nemaha, C. Mathewson, Madison, J. B. Dinsmore, Clay, E. N. Grennell, Washington, M. Stocking, Saunders, H. A. Bruno, Merrick, Geo. H. Thummel, Hall, C. H. Walker, Franklin, whose terms of service shall expire January, 1879.

—— Talbott, Webster County, Chris. Hartman, Douglas, N. Campbell, Buffalo, M. H. Marble, Pawnee, whose terms shall expire January, 1878.

Board proceeded to election of officers, with following result:

M. DUNHAM, President, Omaha.
C. MATHEWSON, 1st Vice-President, Norfolk.
ED. MCINTYRE, 2d Vice-President, Seward.
D. H. WHEELER, Secretary, Plattsmouth.
J. W. MOORE, Treasurer, Nebraska City.

On motion, President appointed C. H. Walker, J. F. Kinney, R. W. Furnas, J. W. Moore, E. N. Grennell, committee on premium list.

On motion, Board proceeded to consider point at which next Fair shall be held.

On motion, further consideration postponed until 7 o'clock P.M.

Adjourned to meet at 7 P.M.

LINCOLN, January 10th, 7 P.M.

Board met pursuant to adjournment, officers and members as before.

Treasurer submitted report showing total receipts, including balance on hand last year and note M'Hugh & Van Daunaher, ...	$9124.25
Orders paid,.....	7124.00
Balance on hand (including note M'H. & V'D., ...	$2000.25

(Detailed and itemized statement on file in Secretary's office.)

Secretary submitted his annual report, showing orders drawn to amount of $7136.86.

Reports referred to committee on finance, Kinney, Mathewson, and Williams.

Communication read from J. R. Dodge, chairman Congressional Statistical Committee, in reference to statistics. Filed, and subject matter referred to select committee, consisting of Kinney, Walker, and Williams.

Account State Journal Company, printing and advertising, $42, read, and referred to committee, Mathewson and Wheeler, who in due time reported correct. Report committee adopted, and bill ordered paid.

Board proceeded by ballot to locate Fair of 1877.

Lincoln received 15 votes.
Omaha " 5 "
Fair located at Lincoln.

On motion of Mr. Kinney, Premium List ordered printed, under direction of Board of Managers.

Adjourned until to-morrow evening, 7 o'clock.

LINCOLN, January 11th, 7 P.M.

Board convened pursuant to adjournment. Quorum present.

The following accounts presented, and ordered paid.

Jno. L. McConnell, $1.25; J. W. Moore, $33.40; J. W. Marshall, $24.33; J. P. Young, $4; State Journal Co., $10.

Account of Webster & Burr, for legal services, presented, and referred to committee on Finance.

President appointed J. K. Honeywell, chairman, C. H. Winslow, R. W. Furnas, Chris. Hartman, J. F. Kinney, Board of Managers. Confirmed by Board.

Time for holding next Fair agreed upon, commencing September 24th, and continuing five days.

Kinney, Mathewson, and Williams, continued as Finance Committee for ensuing year.

Committee on Finance reported accounts of Treasurer and Secretary correct.

On motion, special premium awarded Mary Ramsborg, cotton tidy.

One thousand copies of the address of J. F. Kinney, ordered printed.

Sundry papers, protests, and telegrams relating to races of last Fair, read, and referred to President, Secretary, and Board of Managers.

Committee on Premium List allowed further time, and directed to report to Board of Managers, who are authorized to take final action thereon.

Minutes read and approved.

Board adjourned.

M. DUNHAM, *President.*

DANIEL H. WHEELER, *Seeretary.*

PROCEEDINGS, 1877.—SEPTEMBER.

LINCOLN, September 26, 1877.

Board met pursuant to call. Present—

OFFICERS, M. Dunham, President, Ed. McIntyre, Second Vice-President, J. W. Moore, Treasurer, D. H. Wheeler, Secretary.

MEMBERS, Stocking, Walker, Carey, Clarkson, Furnas, Kinney, Dorsey, Williams, Drake, Lyman, Vallery, Winslow, Hastings, Daniels.

PRESIDENTS COUNTY SOCIETIES, Honeywell, Lancaster; Wheeler, Cass; McIntyre, Seward; Wells, Franklin.

Grennell, Dinsmore, Belden, Mathewson, Thummel, Talbot, with excuses, were excused for non-attendance.

Turner, Bruno, Campbell, and Marble non-attendance without excuse, their offices were declared vacant, and I. P. Beecher, N. R. Persinger, — Lane, and J. W. Hollinghead elected to fill said vacancies.

Resolution of Mr. Winslow, adopted: That at next January meeting place for holding next fair be determined upon.

Agreed that next state fair be held commencing on the twenty-third day of September, 1878, and continue five days.

Judge Kinney offered following resolution, which was unanimously adopted:

Resolved, That this Board are under many obligations to Maj. Chambers for the able and impartial manner in which he discharged the duties of Superintendent Class 15; that the high character of this gentleman, and his long residence in Nebraska, are an effectual protection against any and all assaults that may have been made by designing parties; and the Board do more fully endorse all his acts, decisions, and doings while presiding in the stand during the races at our late State Fair.

On motion, R. W. Furnas, J. F. Kinney, and D. H. Wheeler appointed committee to prepare complimentary address to exhibitors and others who contributed to make present fair a grand success.

Board adjourned.

M. DUNHAM, *President.*

DANIEL H. WHEELER, *Secretary.*

PROCEEDINGS, 1878.—JANUARY.

LINCOLN, January 15, 1878.

Board met in compliance with law governing, and call President and Secretary present.

OFFICERS, M. Dunham, President, C. Mathewson, First Vice-President, Ed. McIntyre, Second Vice-President, D. H. Wheeler, Secretary.

MEMBERS, Stocking, Furnas, Walker, Clarkson, Dinsmore, Dorsey, Williams, Drake, Winslow, Lyman, Hastings, Daniels, Hartman, Lane, Hollinghead, Carey.

PRESIDENTS COUNTY SOCIETIES, Holderman, Pawnee; Wheeler, Cass; Coe, Harlan; Gage, Franklin; Honeywell, Lancaster; Lisk, Otoe; Van Horn, Polk; Furnas, Nemaha; Hall, Adams; Moffett, Saline; Marsh, Clay; Hood, Platte; Gaylord, Washington; Knap, York; Mathewson, Madison.

Reports Treasurer and Secretary read and referred to Committee on Finance.

Claim of M. H. Morrill for counterfeit five dollar bill, presented and referred to same committee.

Moore and Grennell with excuses were excused for non-attendance.

Seats Thummel and Persinger declared vacant without excuse for non-attendance.

On motion, McIntyre, Stocking, and Clarkson appointed committee to report names of suitable persons to fill all vacancies in Board.

Committee reported the following names. Report adopted and parties declared elected:

Chris. Hartman, Douglas County; G. W. E. Dorsey, Dodge, A. G. Hastings, Lancaster; D. J. Drake, Saline; C. W. Lyman, Gage; C. H. Winslow, Cass; H. D. Perky, Saunders; M. K. Lewis, Adams; J. F. Kinney, Otoe; Ed. McIntyre, Sewdar;

Theron Nye, Dodge; Rice Eaton, Buffalo; G. L. Lane, Harlan; Horace Allen, Merrick; T. J. Holt, Thayer, for two years.

Wm. McAllister, Hall County; Samuel Barnard, Pawnee County, for one year.

On motion Mr. Hood, adopted: That all applications for State Fair be filed with the Secretary during this day, and that President appoint committee of three to consider and report on said applications.

On motion, Mr. Dorsey, referred to Committee on Premium List: That Committee on Premium list be instructed to change Lot 1, Class 1, "Thoroughbreds," to "Registered Horses," and to admit for competition under this class all horses that are recorded in "Wallace's Trotting Register," or "American Turf Register."

Mr. Hastings presented following communication, which was referred to same committee:

LINCOLN, January 15, 1878.

To the Honorable State Board of Agriculture:

I respectfully suggest following amendment to premium list:

Class 1, Lot 2, to be "Registered Horses." This lot to embrace only those animals whose pedigrees are traceable in part to the American or English Stud Books, or the American Turf Register. The committee are expected to exercise great care in the examination of pedigrees, and are expressly instructed to exclude from their awards in this lot unsound or unworthy individual animals. I believe Lot 1, Class 1, should stand as it now is to protect strictly pure blooded animals. But the enterprising breeder who has produced a model horse one-half, three-fourths, or seven-eighths thoroughbred should not be crowded out to compete with careless, cold-blooded mongrel breeding. I would provide the same premium for "Registered Horses' that I would for "Thoroughbreds." There are now a number of first class horses in the State, and the breeder who risks his money in paying high prices for the services of said distinguished

horses, as "Alarm," "Saturn," "Frolicsome," "Diadem," "Hart Comstock"—and but few if any of them got from our best mares, could be entered as thoroughbreds—demand your encouragement. There is a disposition, on the part of breeders, to break "up" instead of "down". This disposition should be strengthened and encouraged by all means at your disposal.

Respectfully,

J. N. LEONARD.

Board proceeded to the election of officers with the following result:

M. DUNHAM, President, Omaha.
CHAS. MATHEWSON, 1st Vice-President, Norfolk.
C. H. WINSLOW, 2d Vice-President, Mt. Pleasant.
D. H. WHEELER, Secretary, Plattsmouth.
CHRIS. HARTMAN, Treasurer, Omaha.

On motion Mr. Walker, President appointed C. H. Walker, G. W. E. Dorsey and Ed. McIntyre Committee on Finance.

The President, on motion of Mr. Carey, appointed Carey, Furnas, Hartman, Lyman, Dawson and Stocking Committee on Premium List.

The President announced Hood, Furnas, Dorsey, Mathewson and Eaton a committee to whom should be referred all applications for next State Fair. Applications were filed from Wahoo and Lincoln, numerously signed by leading men and officials, guaranteeing accommodations and improvements.

Messrs. Touzalin and Lowell of the B. & M. R. R. offered accommodations and facilities in favor of Lincoln.

The committee reported the whole matter back to the Board for their consideration, without recommendation.

Adjourned until to-morow morning at 8 o'clock.

LINCOLN, January 16, 8 o'clock.

Board convened pursuant to adjournment. Officers as before and quorum present.

Seat of Mr. Becker declared vacant, by reason of non-attendance without excuse. R. Daniels, of Sarpy County, was elected to fill vacancy,

Mr. Stocking, Superintendent of Lot 5, Class 3, reported that no entries had been made in said Lot, owing to the fact that the premium of $500 was not large enough to induce any one to bring 1,000 head thoroughbred sheep into the State. He recommended graduated premiums, and also of flocks.

Bond of Treasurer Hartman, for $5,000, with G. W. E. Dorsey, Henry Gibson, and A. G. Hastings as sureties, read and approved.

The question of locating next State Fair was taken up, and after a full presentation of all advantages claimed by contending points, Lincoln and Wahoo, the Board decided by ballot in favor of Lincoln—24 to 14 votes.

Dinsmore, Eaton, Clarkson, Hood, and Allen were excused from further attendance of this session.

The President appointed A. G. Hastings, Lincoln, C. H. Winslow, Mt. Pleasant, R. W. Furnas, Brownville, H. D. Perkey, Wahoo, and Ed. McIntyre, Seward, Board of Managers. Said appointments approved by the Board.

Adjourned until 7 o'clock this evening.

LINCOLN, January 16, 7 P.M.

Board convened pursuant to adjournment. Officers as before, and quorum present.

The committee on Champion Class, No. 7, reported the folowing awards. Report approved by the Board.

Greatest number forest trees planted on Arbor Day, half premium to J. W. Small..... $25.00
Greatest number trees put out by one man during year 1877, J. W. Small..... $25.00
Best lot forest trees, E. V. Erickson..... $10.00
Greatest number of forest trees put out during month of April, 1877, J. W. Small..... $12.50
Greatest number of forest trees put out during year 1877, E. F. Stephens..... $15.00
Best 10 acres of Oats, J. W. Hermance..... $10.00
Best 40 rods hedge fence planted in 1877, David Jones... $ 5.00
Best 80 rods hedge fence planted in 1877, David Jones... $10.00
Greatest number of fruit trees planted in 1877, Samuel Barnard $20.00
Second do., E. F. Stevens..... $10.00
Best orchard planted in 1877, Samuel Barnard..... $10.00
Second do., E. F. Stevens..... $ 5.00

Finance Committee reported the Treasurer's account correct, he having received from all sources $9,246.25; paid out $8,550.22, and balance on hand $696.03, as shown by itemized statement examined.

Also, that the Treasurer be directed to pay N. W. Merrick $5 in place of counterfeit returned.

Also, that the Treasurer be directed to place note of M'Hugh & Van Daunaher in hands of an attorney for collection.

Committee on Premium List reported. Report adopted and ordered printed.

On motion of Mr. Winslow the State Horticultural Society was invited to hold its Fruit Exhibit in connection with the State Fair, and the sum of $350 appropriated by this Board to pay premiums awarded by said Horticultural Society.

By vote of the Board the pay of employees, during the State Fair, was fixed: Day police $1.50 per day; night police $2.00 per day; gate keepers $3.00 per day.

On motion of Mr. Winslow, and by vote of the Board, it was

agreed that hereafter, until otherwise ordered, actual traveling and hotel expenses of Officers, Board of Managers, and Class Superintendents while attending State Fairs, be paid by this Board.

Resolutions by R. W. Furnas; adopted.

Resolved, That it is the duty of the National Legislature, under its powers to regulate commerce among the states, to provide, by stringent regulations, against the spread ef contagious diseases among the domestic animals of the country; and to further provide against the importation from foreign countries of rinderpest, or any other disease known to be contagious among such animals.

Resolved, That a copy of this resolution be furnished the Press of the State, and the Representatives and Senators in Congress, and that they be requested to use all laudable efforts to secure the necessary legislation and regulations to prevent the importation of contagious diseases, and the spread of those already afflicting the country.

On motion Mr. Winslow, the thanks of the Board were tendered T. H. Leavitt for free use "Library Hall," in which meetings have been held.

President appointed S. G. Owen, of Lincoln, General Superintendent, with power to appoint such assistants as he may require in discharge of his duties. Appointment and privilege confirmed by Board.

Daniel D. Johnson, of Cass County, was appointed General Superintendent of Police, and appointment confirmed.

Resolutions by Mr. Walker, adopted:

Resolved, That our Senators and Representatives in Congress be requested to use their utmost endeavors to secure an amendment to the "Timber Culture Act," to provide for the withdrawal of one-quarter of every section of the public lands now subject to entries under said act for the purpose of Timber Culture entries.

Resolved, That our Senators and Representatives in Congress be requested to urge an amendment to the Homestead Act requiring cultivation of at least four acres of timber on homesteads located on prairie lands before final receipt be given.

On motion, G. W. E. Dorsey, Rice Eaton, R. W. Furnas, D. T. Drake, C. H. Walker, D. H. Wheeler, J. H. Hook, Howard Kennedy, T. H. Leavitt, and Wm. Adair were appointed a special

committee to collect and prepare for transportation, Nebraska products for Paris Exposition.

Board adjourned.

MARTIN DUNHAM, *President.*

DANIEL H. WHEELER, *Secretary.*

PROCEEDINGS, 1878.—SEPTEMBER.

LINCOLN, September 26, 1878.

Board met pursuant to call and time fixed by law. Present:

OFFICERS, M. Dunham, President, Chris. Hartman, Treasurer, D. H. Wheeler, Secretary.

MEMBERS, Walker, Carey, Furnas, Kinney, Dorsey, Grennell, Wyman, Lane, McIntyre, Hastings, Allen, Eaton, Stocking, Barnard, Perkey, Drake, Nye, and Daniels.

PRESIDENTS COUNTY SOCIETIES, Gage, Franklin; Burke, Lancaster; Wheeler, Cass.

Moore, Mathewson, Dinsmore, and Clarkson, with excuses, were excused for non-attendance.

Without excuses, seats M'Allister, Holt, and Lewis declared vacant.

E. W. Arnold, J. W. Jacobs, L. A. Kent elected to fill vacancies.

D. H. Wheeler announced death of C. H. Winslow, of Cass, long a useful and active member of the Board.

Furnas, Stocking, and Kinney appointed committee to draft resolutions expressive of the sense and feeling of the Board as to death of Mr. Winslow, with instructions to forwar dreport to Secretary, and copy to family of deceased.

J. W. Johnson, of Cass, was elected to fill vacancy occasioned by death of Mr. Winslow.

On motion, premium on Entry 178, Class 6, awards 1878, was ordered paid.

Superintendent and committee withdrew their report striking out awards Lot 4, Class 3, and premiums ordered paid.

Board adjourned.

M. DUNHAM, *President.*

DANIEL H. WHEELER, *Secretary.*

PROCEEDINGS, 1879.—JANUARY.

LINCOLN, January 21, 1879.

Board met pursuant to call, and time fixed by law. Present:

OFFICERS, Martin Dunham, President, Charles Mathewson, Vice-President, Chris. Hartman, Treasurer, Daniel H. Wheeler, Secretary.

MEMBERS, E. N. Grennell, R. W. Furnas, J. B. Dinsmore, R. Daniels, J. T. Clarkson, R. Eaton, Moses Stocking, C. H. Walker, S. Barnard, E. W. Arnold, G. W. E. Dorsey, D. T. Drake, Theron Nye, Edmund McIntyre, J. W. Johnson, A. G. Hastings, J. W. Jacobs, G. W. Lawse, L. A. Kent.

EX-OFFICIO MEMBERS, J. T. Clarkson, President Colfax County Agricultural Society, G. W. E. Dorsey, proxy for President Dodge County Agricultural Society, E. M. Cornell, proxy for President Thayer County Agricultural Society, D. H. Wheeler, President Cass County Agricultural Society, W. H. Barstow, proxy for President Saline County Agricultural Society, L. Crounse, proxy for President Washington County Agricultural Society, A. K. Marsh, President Clay County Agricultural Society, J. D. Gage, President Franklin County Agricultural Society, W. Gill, President Seward County Agricultural Society, L. J. Carpenter, President Pawnee County Agricultural Society, J. F. Coulter, President Fillmore County Agricultural Society, V. C. Utley, proxy for President Otoe County Agricultural Society, N. R. Persinger, proxy for President Merrick County Agricultural Society.

A quorum being present, the President declared the Board ready for business.

The Secretary submitted his annual report, which was, on motion, referred to the Auditing Committee.

The Treasurer submitted his annual report, which was, on motion, referred to the Auditing Committee.

Mr. C. H. Walker moved that a committee of three be appointed by the President, to recommend suitable persons to become members of the State Board of Agriculture, in place of those whose terms expire at this annual meeting.

The motion carried, and the President appointed Messrs. E. McIntyre, G. W. E. Dorsey, and A. G. Hastings, as such committee.

The following gentlemen were placed in nomination, from which the committee were recommended to select the members recommended for election to membership on the Board.

C. H. Walker, J. T. Clarkson, E. N. Grennell, H. C. Stoll, J. C. McBride, A. D. Williams, R. W. Furnas, C. Mathewson, J. R. Craig, J. B. Dinsmore, M. Dunham, M. Stocking, D. H. Wheeler, R. Daniels, W. S. Barstow, M. K. Walker, Samuel Barnard, F. C. Grable, L. Kinsman, E. W. Arnold, V. C. Utley.

On motion, Messrs. J. F. Kinney, Lyman, Horace Allen, and H. D. Perky, having notified the Secretary of their inability to be present at this meeting, on acconnt of other engagements, were excused for non-attendance upon this Board at this meeting.

Mr. President:—The committee appointed to recommend gentlemen for membership on the Board, recommend the following persons, viz:

C. Mathewson, D. H. Wheeler, E. N. Grennell, M. Dunham, M. Stocking, C. H. Walker, R. Daniels, H. C. Stoll, J. T. Clarkson, R. W. Furnas, J. B. Dinsmore, S. Barnard, J. C. McBride, A. D. Williams.

Respectfully submitted,

G. W. E. Dorsey.
E. McIntyre.
A. G. Hastings.

On motion the report of the committee was received, and the gentlemen recommended were elected members by acclamation, to serve for two years.

Hon. L. Crounse moved that gentlemen holding proxies of presidents of county societies be permitted to represent their respective societies during this meeting of the state board of agriculture.

On motion proceeded to the election of officers of the board for the ensuing year.

The election being had, resulted in the election of the following gentlemen, viz.:

M. Dunham, President.
C. Mathewson, 1st Vice-President.
R. W. Furnas, 2d Vice-President.
Chris. Hartman, Treasurer.
Daniel H. Wheeler, Secretary.

On motion a premium list committee was elected, consisting of the following named gentlemen: J. F. Kinney, R. W. Furnas, J. W. Jacobs, E. McIntyre, Theron Nye, J. C. McBride, and J. B. Dinsmore, with instructions to prepare and present a premium list for the ensuing year, at their earliest convenience.

Major Hastings presented the following, from the Nebraska Exposition Association:

At a regular meeting of the board of directors of the Nebraska Exposition Association, held at the office of the president, December 7, 1878, the following resolution was adopted:

Resolved, That this association hereby tenders to the Nebraska State Board of Agriculture the use of the grounds and buildings of this association for the purpose of holding the Nebraska state fair for the year 1879, free of charge, said grounds and buildings to be returned in as good condition as when taken by state board. * * * * * * * * * *

Chas. O. Whedon, *Secretary.*

Judge Kinney offered the following:

Resolved, That the Nebraska Exposition Association and the citizens of Lincoln are hereby invited to place in writing, over the signatures of the officers of said association and of responsible citizens, the terms and conditions by which they

tender the grounds and buildings for the holding of the state fair for the year 1879, and that they submit the same to a meeting of this board at its adjourned meeting to-morrow morning.

Which resolution was on motion adopted.

On motion the consideration of the subject of location of the state fair for 1879 was postponed until to-morrow morning.

On motion the president and secretary were requested to report to this board, for its information and for the information of the citizens of Lincoln, what improvements and buildings in addition to those had during last fair were necessary upon the fair grounds to enable the board to hold a successful fair the coming year and accommodate the exhibitors and visitors.

On motion the president appointed the following gentlemen an auditing committee to examine and report upon the accounts of the secretary and treasurer, viz.: C. H. Walker, G. W. E. Dorsey, and E. H. Grennell.

Judge Kinney offered the following, viz.:

Resolved, That the premium committee are hereby instructed to insert a provision in the premium list prohibiting the sale or giving away of all intoxicating drinks, by or through any person occupying booth privileges, or anywhere on the grounds; and also to insert a provision excluding all gambling of any kind or sort, and all gambling devices; also a provision excluding all pool-selling and shooting of birds or balls on the ground during the holding of the state fair; and also to insert a provision making it the duty of the marshal to enforce these provisions.

Major Hastings moved as an amendment to be inserted after the word "devices," "and all horse-racing, either inside the inclosures or outside (within the jurisdiction of the board), during the holding of the fair, except trials of speed under the auspices of the society," which resolution amended was adopted.

On motion, Messrs. Furnas, Drake, and Laws were appointed a committee to ascertain and report the cost of printing 2,000 copies of the address of Hon. A. S. Paddock, delivered during the late State Fair.

Mr. L. A. Kent, being called away on account of business, was excused from further attendance during the meeting of the Board.

On motion, the Board adjourned until to-morrow morning at 9 o'clock A.M.

LINCOLN, NEBRASKA, January 22, 1879.

The Board met pursuant to adjournment, and was called to order by the President.

Present—M. Dunham, President; C. Mathewson, 1st Vice President; R. W. Furnas, 2d Vice President; Chris. Hartman, Treasurer; Daniel H. Wheeler, Secretary; and members as yesterday, except Mr. Kent, excused.

A letter from A. S. Patrick, relative to first premium in double team race, was presented by Mr. Dunham. Also an appeal from decision of the judges in case horse "Douglass" in the 2.35 race on September 25th, was presented by the secretary.

Both communications were read, and on motion referred to a special committee, consisting of Messrs. Hastings, McBride, Dorsey, Kinney, and Persinger.

Gov. Furnas, from Special Committee, reported that it would cost about $37.50 for printing 1,000 copies of the address of Senator Paddock, and about $50 for 2,000 copies.

Thereupon, on motion, the Secretary was directed to have 2,000 copies printed, and distribute them in the usual manner.

The Committee upon Premium List submitted their report, which was adopted.

The Committee on Premium List were directed to revise the rules and regulations for the government of exhibitors and others during the State Fair, and report same at a subsequent meeting of the Board.

The *Nebraska Farmer* submitted the following proposal:

The *Nebraska Farmer* proposes to furnish the State Board of Agriculture with 5,000 copies of the Premium List, as revised by the committee, omitting the "Scale of Points of Excellence" on judging cattle free of charge; the publisher to get remuneration through advertising patronage. The form of premium list and

material to be of as good a quality as that used in the premium list of 1878, and not to exceed present number of pages, to be delivered by April, 1879, free of charge, to the Secretary at Plattsmouth, Nebraska.

J. C. McBride, *Publisher.*

Which proposition was adopted with the following addition to the original proposal: "And not to exceed present number of pages, and to be delivered by April 15, 1879, free of charge, to the Secretary at Plattsmouth, Nebraska."

REPORT FROM SECRETARY.

Plattsmouth, Neb., December 31, 1878.

Hon. M. Dunham, *President State Board of Agriculture:*

Dear Sir—In accordance with the laws of the state of Nebraska I herewith submit my annual report for the year 1878. Find herewith a detailed statement of the orders drawn upon the Treasurer of the State Board of Agriculture for year 1878 for all purposes, including premiums and expenses of the Board. Last January, after the meeting of the Board, I took the necessary steps to endeavor collect stock, crop, and horticultural statistics for the year 1877.

I labored under many and serious difficulties in securing anything like reliable reports from the several counties for the following reasons:

1. There is no adequate law of the state making it the duty of any officer to collect these statistics in the several counties.

2. After such statistics have been collected the law does not make it the duty of any person to furnish this Board with the information gathered.

3. The matter of gathering the statistics being so little understood by the people of the state, that persons who are engaged in endeavoring to collect them have great difficulty in securing the

necessary accurate information desired, many persons being of the opinion that the information is only asked for the purpose of increasing the taxable property of the persons giving the information.

4. That after such statistics have been gathered and tabulated no provision is made for utilizing the information by publishing the same for the use of our people.

I can but reiterate a recommendation made by myself upon this same important subject in 1874, and almost each session of this Board since—viz.:

The legislature should exact a law requiring the assessors of the several precincts, cities, and wards, to collect statistics relating to the various industries of the state, including amount in acres and bushels of the various crops raised, the number of trees planted during the year, as well as the total number planted during previous years, including forest as well as fruit; also including total number of horses, cattle, sheep, and hogs. I would also recommend that, in reporting the number of horses and cattle, that it would be desirable to have reported the number of head of each age one, two, and three years old, and those of four years old and over, as well as the number of stallions and bulls, the number of brood mares and cows, together with the average value of each grade of cattle and horses as well as the value of hogs and sheep.

Under present law no reports of this Board can be published for general circulation.

Under the present law the Agricultural Societies are not required to make annual reports to this Board, therefore this office is without any official information with reference to the several County Agricultural Societies. I presume, however, that the Presidents of the several societies will present at least verbal reports from their several County Societies.

Should the Legislature by law provide that statistics be collected and furnished this Board, then and in that event the Secretary of the Board should arrange and publish, from time to time, in such manner and form as the Board may deem to be for the best interests of the State, such statistical and other information as those seeking

homes in the west may require to enable them to intelligently judge of our advantages and improvements. To also provide for delivering a synopsis of the same to immigrant aid societies, railroad companies, real estate agencies, and others interested in the settlement and development of the State; also to make arrangements for suitable packages and cases for inspection in the Agricultural rooms, samples of agricultural products, geological and other specimens which the assessors should be required to collect and forward under the direction of the County Clerk. If this was done it would, in a very short time, enable the Board to furnish full, complete and reliable information relative to every part of our State.

The laws of the State should be so amended that the county societies organized under the state law, failing to make the annual report as contemplated and required under the present law, and rules of Board of Agriculture, should be prohibited from receiving aid from the county treasurers until they can show an acknowledgment from the Secretary of the State Board that such report has been made and filed in the Secretary's office. To induce the assessors to perform the duties required of them in collecting the statistics heretofore named, and the county clerks for their services, a reasonable compensation should be paid by the several counties. The Treasurer's exhibit will clearly show that the people of the State are each year taking hold with increased energy in assisting to develop the agricultural interests of the State. Thus far the receipts of the State Board from its annual fairs, and from the state treasury, have been insufficient to pay premiums and expenses of fair. I therefore deem it advisable to ask the legislature to publish at least 6000 copies of the Agricultural Report annually, and the same number of Horticultural Reports, for the use of the State Board of Agriculture and State Horticultural Society, to supply the very large demand made upon them for such information as said organization annually collect, and which is useful and instructive to our own citizens as well as to those looking for western locations.

Respectfully,

DANIEL H. WHEELER, *Secretary.*

Orders drawn on the Treasurer of the Nebraska State Board of Agriculture from January 16th, 1878, to.....

No.				
	1	D. H. Wheeler,.....	acc't services....	$250 00
	2	McCall & Co.....	acc't....	2 00
	3	Nebraska Herald.....	"	2 50
	4	Frank Carruth.....	"	1 50
	5	Nebraska Watchman	"	4 00
	6	J. W. Moore	"	6 75
	7	Clark & Edwards.....	"	75 00
	8	J. W. Marshall	"	34 10
	9	American Express Co.....	"	15 90
	9½	F. D. Cooper.....	"	8 75
	10	Samuel Barnard.....	prem.....	27 00
	10½	F. D. Cooper.....	"	8 00
	11	Tribune Printing Co.....	acc't....	95 00
	11½	Jno. L. Hermance.....	prem.....	8 00
	12	J. W. Small.....	"	50 00
	12½	D. H. Wheeler.....	acc't services....	250 00
	13	E. F. Stephens.....	prem.....	25 50
	13½	D. H. Wheeler.....	acc't services....	250 00
	14	G. W. Smith	prem.....	6 00
	15	Phil. M. Springer	acc't	5 00
	16	E. V. Erickson.....	prem.....	8 00
	17	David Jones.....	"	12 00
	18	E. B. Lewis	acc't	48 00
	19	H. M. Bushnell.....	"	28 00
	20	E. D. Stone	"	28 00
	21	A. Schlegel	"	22 00
	22	Wm. B. Shryock.....	"	20 00
	23	Wm. H. Moore	"	20 00
	24	John Gillespie.....	"	26 00
	25	State Journal Co.....	"	64 00
	26	" "	"	117 10
	27	E. W. Allen	prem.....	40 00
	28	D. M. Tollman.....	"	24 00
	29	A. G. Beeson.....	acc't	8 00

No.					
	30	Wm. H. Moore	acc't	$	20 00
	31	J. W. Jacobs	prem.		80 00
	32	A. G. Hastings	acc't		585 65
	33	M. H. Lacock	prem.		10 00
	34	Raymond Bros	acc't		7 60
	35	W. L. Jennings	prem.		40 00
	36	Henry Fry	"		32 00
	37	Pace & Risley	acc't		1 50
	38	Keyser & Honeywell	"		37 50
	39	W. H. Goodrich	"		37 50
	40	J. & D. Newman	"		1 00
	41	J. Roberts	"		110 00
	42	C. H. Winslow	"		18 50
	43	J. W. Marshall	"		215 02
	44	Lamb, Billingsley & Lambertson	"		35 00
	45	Chris. Hartman	"		20 20
	45½	Rufus Yard	"		4 62
	46	D. & C. L. Baum	"		22 80
	47	Chris. Hartman	"		164 00
	48	D. H. Wheeler	acc't services		250 00
	49	Humphrey Bros.	acc't		13 30
	50	J. H. Harley	"		4 00
	51	American Express Co	"		39 55
	52	J. P. Young	"		3 65
	53	W. E. Donelan	"		1 88
	54	Wheeler Bros	"		2 50
	55	Omaha Publishing Co	"		144 50
	56	Wheeler Bros	"		2 25
	57	Omaha Herald	"		6 00
	58	State Journal Co	"		8 00
	59	Frank Carruth	"		6 00
	60	Chas. Palmer	"		6 00
	61	American Express Co	"		16 45
	62	B. & M. R. R.	"		1 57
	63	"	"		1 08

No.	63½	Phil. M. Springer	acc't	$	5 00
	64	L. F. Allen	"		8 25
	65	G. Ensign	"		4 00
	66	S. C. Elliott	"		13 65
	67	A. G. Hastings (acc't police)			11 60
	68	F. F. Lyon	"		5 00
	69	S. G. Owen	"		7 00
	70	D. H. Wheeler	"		2 65
	71	M. Dunham	"		27 50
	72	Mrs. L. C. Skinner	prem.		3 60
	73	Anderson & Metz	"		32 00
	74	R. S. Piper	"		24 00
	75	W. T. Moore	"		32 00
	76	J. C. Gilbert	"		4 00
	77	Chas. O. Whedon	"		16 00
	78	E. W. Cone	"		17 60
	79	A. G. Hastings	acc't		39 85
	80	A. P. Davenport	prem.		8 00
	81	Franklin Co. Ag. Society	"		40 00
	82	J. Worth	"		2 40
	83	M. M. Hoffman	"		2 40
	84	Elias Haines	"		4 80
	85	J. Q. Stewart	"		12 00
	86	Elias Hartley	"		2 40
	87	Graham P. Browne	"		18 40
	88	E. D. Higgins	"		25 00
	89	S. W. Tillman	"		24 00
	90	Levi Snell	"		4 00
	91	Miss Anna Schuckman	"		3 20
	92	W. J. Martin	"		32 00
	93	P. B. Stewart	"		32 00
	94	S. J. Douglas	"		16 00
	95	Anthony Friday	"		32 00
	96	J. P. Wilson	"		28 00
	97	Mrs. F. Lyon	"		4 00
	98	George McLean	"		2 40

No. 99	Paul H. Marlay	prem.	$	3 20
100	Ensign & Gould	"		16 00
101	Mrs. Isabel Brown	"		2 40
102	Hospital for Insane	"		11 20
103	A. Albrecht	"		12 00
104	Taylor & Callinder	"		15 00
105	T. W. Lowrey	"		32 00
106	Mrs. R. W. Jacobs	"		6 90
107	O. M. Streight	"		100 00
108	J. F. Kinney	"		168 00
109	H. S. Rhodes	"		110 00
110	George Canfield	"		250 00
111	L. B. Phillips	"		12 00
112	Peter Murray	"		15 30
113	Mrs. W. S. Dudley	"		1 60
114	Mrs. C. E. Yates	"		80
115	J. Teeter	"		2 50
116	I. N. Leonard	"		8 00
117	Mrs. J. K. Honeywell	"		1 80
118	Lancaster Ag. Society	"		164 00
119	Chas. D. Schrader	"		1 60
120	Tuttle & Doolittle	"		52 29
121	James Dodrill	"		12 00
122	Lawrence Fossler	"		8 00
123	J. P. Hartman	"		8 00
124	Carrike K. Swither	"		80
125	Alva Smith	"		8 00
126	E. W. Smith	"		8 00
127	Chas. C. Morse	"		9 60
128	Tom Lancaster	"		10 00
129	G. W. E. Dorsey	"		52 00
130	A. Isgrig	"		10.00
131	J. J. Nelson	"		8.00
132	E. C. Ruddock	"		24.00
133	Mrs. C. B. Parker	"		4 50
134	W. J. Harris	"		4.00

No. 135	Aughey	prem.	$ 16	00
136	Allen Barber	"	10	40
137	Mrs. Gov. Garber	"	1	80
138	H. C. Wells	"	8	00
139	A. S. Williams	"	4	00
140	J. F. Adams	"	4	00
141	Wm. Dailey	"	20	00
142	C. W. Lyman	"	26	40
143	W. T. Spearman	"	28	00
144	Harvey Culbertson	"	46	40
145	W. E. G. Caldwell	"	6	40
146	E. F. Stephens	"	7	60
147	Mrs. A. C. Zeimer	"	5	20
148	J. J. Imhoff	acct.	170	35
149	Aug. Th. Gruetter & Co.	"	5	20
149½	Hill & Moore	prem.	20	00
150	Cass Co. Chronicle	acct.	20	00
151	John Gillespie	"		50
152	D. D. Johnson	prem.	33	00
153	Mrs. J. J. Imhoff	"	1	60
154	Mrs. A. C. Kirk	"		80
155	Capital Cornet Band	acct.	100	00
156	W. W. Carder	prem.		80
157	Mrs. J. K. Honeywell	"	4	50
158	A. G. Beeson	acct.	7	50
159	W. J. Hesser	prem.	38	60
160	H. N. Orr	"	60	00
161	S. L. Thomas	"	36	00
162	D. Woodard	"	16	00
163	David Anderson	"	2	40
164	C. Axford	"	9	20
165	E. W. Allen	"	1	60
166	J. P. Brown	"	36	00
167	Adam Bricker	"	8	00
168	J. T. Bishop	"	4	90
169	J. J. Briscoe	"	3	20

No. 170	Mrs. E. E. Brown	prem.	$	2 40	
171	Mary E. Boggs	"		80	
172	S. Barnard	"		5 40	
173	J. H. Bailey	"		2 70	
174	W. B. White	"		4 50	
175	W. B. Bull	"		90	
176	W. J. Butt	"		8 00	
177	Lewis Canfield	"		8 00	
178	Jas. Y. Craig	"		13 30	
179	Hiram Craig	"		99 90	
180	Carey & Long	"		4 80	
181	Dawson & McBride	"		24 00	
182	" "	"		56 00	
183	G. W. E. Dorsey	"		20 00	
184	Mrs. J. Doolittle	"		1 60	
185	Miss Alice Dill	"		80	
186	L. A. Moore	"		5 40	
187	J. O. Dearborn	"		80 00	
188	R. Daniels	"		100 00	
189	Eliason Nelson	"		16 00	
190	Robert Fleming	"		34 40	
191	J. O. Frantz	"		8 00	
192	R. W. Furnas	"		3 60	
193	R. E. Grimstead	"		8 00	
194	E. S. Gaylord	"		8 00	
195	T. E. Gledhill	"		4 00	
196	S. W. Gramlich	"		4 00	
197	A. Gramlich	"		28 00	
198	G. L. Skinner Vick's	"			$20 00
199	J. G. Warden	"		16 00	
200	A. P. West	"		8 00	
201	Joe Gross	"		30 00	
202	Mrs. E. J. Gillett	"		1 60	
203	Silas Gould	"		2 80	
204	John Grieve	"		35 20	
205	Lewis Hodgson	"		16 00	

No. 206	J. M. W. Jones	acct.	$ 89 00		
207	John L. Hermance	prem.	12 00		
208	A. W. Hawley	"	8 00		
209	Rachel Hitchcock	"	80		
210	Geo. M. Hawley	"	4 00		
211	Harris & Franklin	"	1 60		
212	Mrs. W. W. Holmes	"	80		
213	Mrs. D. H. Hull	"	80		
214	Lewis Hodgson	"	60 00		
215	Mrs. John Hodge	"	3 60		
216	Warren Hawley	"	4 80		
217	A. C. Hate	"	4 80		
218	Mrs. S. M. Harris	Vick's prem.			$5 00
219	Geo. Canfield	prem.	75 00		
220	J. F. Ingman	"	4 00		
221	D. S. Lowe	"	16 00		
222	J. B. Long	"	4 00		
223	J. C. McBride	"	8 00		
224	B. F. Mickle	"	8 00		
225	Charles J. McDonald	"	48 00		
226	Walter M. Morgan	"	52 00		
227	Miss Maggie Miller	"	40		
228	Geo. Meissner	"	80		
229	O. A. McKenzie	"	80		
230	Miss Kate Monell	"	2 70		
231	P. J. Myers	"	12 00		
232	Geo. McLean	Vick's prem.			$10 00
233	Theron Nye	prem.	32 00		
234	Newman & Fawell	"	16 00		
235	Burcher & McLaughlin	"	63 00		
236	A. S. Patrick	"	51 00		
237	Mrs. Max Peters	"	4 00		
238	Wm. H Pettitt	"	2 40		
239	Mrs. E. Payden	"	80		
240	W. T. Ramsdall	"	4 00		
241	Mrs. E. T. Roberts	"	80		

No. 242	Richardson Co. Ag'l Society,	prem	$ 13	50
243	Thomas Smith	"	12	00
244	Jas Stephenson	"	8	00
245	E. M. Stockton	"	10	40
246	Mrs. E. M. Stockton	"		80
247	G. W. Shidler	"	15	00
248	M. M. Stover	"	2	40
249	T. A. Stratton	"	2	40
250	T. L. Shaw	"	2	70
251	L. E. Sinsabaugh	"	23	20
252	A. D. Sage	"	2	40
253	D. M. Follman	"	24	00
254	M. L. Tuster	"		40
255	Mrs. J. B. Trickey	"		80
256	J. W. Wilcox	"	12	00
257	Jacob Wolf	"	4	00
258	Woods & Curry	"	4	00
259	Mrs. J. B. Woods	"	8	10
260	James Whalen	"	2	80
261	Chas Whiffin	"		40
262	J. C. McBride, 63 subs. to Farmer		63	00
263	E. E. Moore	acc't	3	40
264	Miss Kate Monell	prem	1	80
265	Mrs. Max Peters	"		80
266	John Gross	acc't	10	00
267	Otoe Co. Pomological Soc'y,	prem	13	50
268	E. M. Stockton	"	8	00
269	Theron Nye	"	4	00
270	Baily, Banks & Biddle	acc't	211	90
271	W. H. Dobson	"	20	00
272	Chris Hartman	"	8	00
273	John S. Canfield	"	1	50
274	Maverick & Wissinger	"	12	75
275	American Express Co	"	18	35
276	J. P. Young	"	3	15
	Total		$7791	71

The foregoing statement of orders drawn is respectfully submitted to the State Board of Agriculture, for examination at their annual meeting, to be held on January 21st, 1879.

DANIEL H. WHEELER,
Secretary.

ANNUAL STATEMENT OF C. HARTMAN,

Treasurer State Board of Agriculture.

1878.		*Dr.*	
Jan'y 1.	To balance from J. W. Moore, ex-treas	$	686.03
Sept. 28.	" Cash for booth privilvges		1,040.00
	" stall privileges		345.50
	" speed entrances		470.00
	" ½ fare school tickets		43.50
	" camp tickets		67.50
	" vehicle tickets		107.50
	" quarter stretch tickets		22.50
	" collections on grounds		9.00
	" State of Nebraska		1,000.00
	" sale of tickets at windows.....		3,192.00
Oct. 11.	" B. & M. R. R. coupon tickets		763.50
Nov. 3.	" U. P. R. R. coupon tickets		104.00
			$7,851.03

Contra.

Jany. 16.	By paid	D. H. Wheeler, Order No.	1	$250.00
21.	"	McCall & Co.	2	2.00
	"	Nebraska Herald	3	2.50
	"	Frank Carruth	4	1.50
	"	Nebraska Watchman ...	5	4.00
	"	J. W. Moore	6	6.75
	"	Clark & Edwards	7	75.00

Jany. 21,	By paid	J. W. Marshall, Order No.	8	$34.10
	"	American Ex. Co.....	9	15.90
May 28.	"	F. D. Cooper	9½	8.75
Jany. 31.	"	Samuel Barnard	10	27.00
July 31.	"	F. D. Cooper	10½	8.00
	"	Tribune Printing Co. ..	11	95.00
Jany. 31.	"	John L. Hermance.....	11½	8.00
	"	J. W. Small	12	50.00
Sept. 21.	"	D. H. Wheeler	12½	250.00
Jany. 31.	"	E. F. Stephens	13	25.50
Sept. 21.	"	D. H. Wheeler	13½	250.00
Feby. 2.	"	G. W. Smith	14	6.00
25.	"	Phil. M. Springer	15	5.00
March 6.	"	E. O. Erickson.	16	8.00
	"	David Jones	17	12.00
Sept. 28.	"	E. B. Lewis	18	48.00
	"	H. M. Bushell.....	19	28.00
	"	Edgar D. Stone.....	20	28.00
	"	Alex. Schlegel.....	21	22.00
	"	W. B. Shryock	22	20.00
	"	W. H. Moore	23	20.00
	"	John Gillespie	24	26.00
	"	State Journal Co.....	25	64.00
	"	State Journal Co.....	26	117.10
	"	E. W. Allen	27	40.00
	"	D. M. Tollman	28	24.00
	"	A. G. Beeson	29	8.00
	"	Wm. H. Moore.....	30	20.00
	"	J. W. Jacobs.....	31	80.00
	"	A. G. Hastings.....	32	585.65
	"	M. H. Lacock	33	10.00
	"	Raymond Bros.....	34	7.60
	"	W. L. Jennings.....	35	40.00
	"	Henry Fry.....	36	32.00
	"	Pace & Risley.....	37	1.50
	"	Keyser & Honeywell...	38	37.50

Sept. 28.	By paid	W. H. Goodrich, Order No.	39	$37.50
	"	J. & D. Newman.....	40	1.00
	"	J. Roberts	41	110.00
	"	C. H. Winslow.....	42	18.50
	"	J. W. Marshall.....	43	215.02
	"	Lamb, Billingsley & Lambertson	44	35.00
	"	Chris Hartman.....	45	20.20
	"	Rufus Yard.....	45½	4.62
	"	D. & C. L. Baum	46	22.80
	"	Chris Hartman	47	164.00
Sept. 23.	"	D. H. Wheeler	48	250.00
Sept 28.	"	Humphrey Bros.....	49	13.30
	"	J. H. Harley	50	4.00
	"	American Ex. Co.....	51	39.55
	"	J. P. Young.....	52	3.65
	"	W. E. Donelan.....	53	1.88
	"	Wheeler Bros	54	2.50
	"	Omaha Pub. Co.....	55	144.50
	"	Wheeler Bros.....	56	2.25
	"	Omaha Herald.....	57	6.00
	"	State Journal Co.....	58	8.00
	"	Frank Carruth.....	59	6.00
	"	Chas. Palmer	60	6.00
	"	American Ex. Co.....	61	16.45
	"	B. & M. R. R. Co.....	62	1.57
	"	Phil. M. Springer.....	63½	5.00
	"	B. & M. R. R. Co.....	63	1.08
	"	L. F. Allen.....	64	8.25
	"	G. Ensign.....	65	4.00
	"	S. C. Elliott.....	66	13.65
	"	A. G. Hastings.....	67	11.60
	"	T. F. Lyon.....	68	5.00
	"	S. G. Owen.....	69	7.00
	"	D. H. Wheeler.....	70	2.65
	"	M. Dunham	71	27.50

Sept. 28,	By paid	Mrs. L. C. Skinner...	No. 72	$ 3.60
	"	Anderson & Metz.....	73	32.00
	"	R. S. Piper.....	74	24.00
	"	W. T. Moore.....	75	32.00
	"	J. C. Gilbert.....	76	4.00
	"	Chas. O. Whedon.....	77	16.00
	"	E. W. Cone, ...	78	17.60
	"	A. G. Hastings	79	39.85
	"	A. P. Davenport.....	80	8.00
	"	Franklin Co. Ag'l Society	81	40.00
	"	J. Worth	82	2.40
	"	M. M. Hoffman.....	83	2.40
	"	Elias Haines.....	84	4.80
	"	I. Q. Stewart.....	85	12.00
	"	Elias Hartley.....	86	2.40
	"	Graham P. Brown.....	87	18.40
	"	E. D. Heygus.....	88	25.00
	"	S. W. Tillman.....	89	24.00
	"	Levi Snell.....	90	4.00
	"	Miss Annie Shuckman..	91	3.20
	"	W. J. Martin.....	92	32.00
	"	P. B. Stewart	93	32.00
	"	S. J. Douglas	94	16.00
	"	Anthony Friday	95	32.00
	"	J. P. Wilson.....	96	28.00
	"	Mrs. F. Lyons	97	4.00
	"	Geo. McLean.....	98	2.40
	"	Paul H. Marlay	99	3.20
Sept. 30.	"	Ensign & Gould.....	100	16.00
	"	Mrs. Isabel Brown	101	2.40
	"	Hospital for Insane.....	102	11.20
	"	A. Albrecht.....	103	12.00
	"	Taylor & Callender	104	15.00
	"	T. W. Lowrey	105	32.00
	"	Mrs. R. W. Jacobs	106	6.90
Oct. 1.	"	O. M. Straight...	107	100.00

Oct. 1,	By paid	J. F. Kinney, Order No.	108	$168.00
	"	H. S. Roades.....	109	110.00
	"	Geo. Canfield.....	110	250.00
	"	L. B. Phillips.....	111	12.00
	"	Peter Murray	112	15.30
	"	Mrs. W. S. Dudley.....	113	1.60
	"	C. E. Yates	114	80
	"	J. Teeter.....	115	2.50
	"	J. N. Leonard	116	8.00
	"	Mrs. J. K. Honeywell...	117	1.80
	"	Lancaster Co. Ag'l Soc'y	118	164.00
	"	Chris. Schrader.....	119	1.60
	"	Tuttle & Doolittle... .	120	52.29
	"	James Doodrill.....	121	12.00
	"	Lawrence Tassler.....	122	8.00
	"	J. P. Hartman	123	8.00
	"	Carrie K. Swisher.....	124	80
	"	Alva Smith.....	125	8.00
	"	E. W. Smith	126	8.00
	"	Chas. C. Morse	127	9.60
	"	T. Lancaster	128	10.00
	"	G. W. E. Dorsey	129	52.00
	"	H. Isging	130	10.00
	"	J. J. Nelson	131	8.00
	"	E. C. Ruddock.....	132	24.00
	"	Mrs. C. B. Parker	133	4.50
	"	W. J. Harris	134	4.00
	"	Samuel Aughey.....	135	16.00
	"	Allen Barlem	136	10.40
Oct. 2.	"	Mrs. Gov. Garber.....	137	1.80
	"	H. C. Wells.....	138	8.00
	"	A. S. Williams.....	139	4.00
	"	J. F. Adams	140	4.00
	"	Wm. Dailey.....	141	20.00
	"	C. W. Lyman.....	142	26.40
	"	W. T. Spearman.....	143	28.00

Oct. 2.	By paid	H. Culbertson, Order No.	144	$46.40
	"	W. E. G. Caldwell	145	6.40
	"	E. F. Stephens.....	146	7.60
	"	Mrs. A. C. Zeimer	147	5.20
	"	J. J. Imhoff.....	148	170.35
	"	Aug. Th. Gruetter & Co.	149	5.20
	"	Hill & Moore.....	149½	20.00
	"	Cass Co. Chronicle.....	150	20.00
	"	John Gillespie.....	151	50
	"	D. D. Johnson	152	33.00
	"	Mrs. J. J. Imhoff	153	1.60
	"	Mrs. A. C. Kinka.....	154	80
	"	Capital Cornet Band...	155	100.00
Oct. 3.	"	W. W. Carder.....	156	80
	"	Mrs. J. K. Honeywell ..	157	4.50
	"	A. G. Beeson.....	158	7.50
Oct. 5.	"	W. J. Hesser.....	159	38.60
	"	H. N. Orr.....	160	60.00
	"	Sam'l L. Thomas.....	161	36.00
	"	D. Woodard	162	16.00
Oct. 7.	"	David Anderson.....	163	2.40
	"	C. Axford.....	164	9.20
	"	E. W. Allen	165	1.60
	"	J. P. Brown..... ...	166	36.00
	"	Adam Bricker.....	167	8.00
Oct. 8.	"	J. T. Bishop.....	168	4.90
	"	J. Z. Briscoe.....	169	3.20
	"	Mrs. E. E. Brown.....	170	2.40
	"	Mary E. Boggs	171	80
	"	Sam'l Barnard.....	172	5.40
	"	J. H. Baily.....	173	2.70
	"	Burt Co. Ag'l Society..	174	4.50
	"	W. B. Bull.....	175	90
	"	N. J. Butt.....	176	8.00
	"	Lewis Canfield.....	177	8.00
	"	Jas. Y. Craig.....	178	13.30

Oct. 8.	By paid	Hiram Craig, Order No.	179	$ 99.90
	"	Cary & Long.....	180	4.80
	"	Dawson & McBride....	181	24.00
	"	" "	182	56.00
	"	G. W. E. Dorsey	183	20.00
	"	Mrs. J. Doolittle.....	184	1.60
	"	Miss Alice Dill.....	185	80
Oct. 9.	"	L. A. Moore.....	186	5.40
	"	J. O. Dearborn.....	187	80.00
	"	R. Daniels.....	188	100.00
	"	Eleason Nelson.....	189	16.00
	"	Rob't Fleming,.....	190	34.40
	"	J. O. Frantz	191	8.00
	"	R. W. Furnas.....	192	3.60
	"	R. E. Grimstead	193	8.00
	"	E. S. Gaylord	194	8 00
	"	T. E. Gledhill	195	4.00
	"	S. W. Gramlick	196	4.00
	"	A. Gramlick	197	28.00
	"	J. G. Warden	199	16.00
	"	H. P. West	200	8.00
	"	Joe Grass.....	201	30.00
	"	Mrs. E. J. Gillett.....	202	1.60
	"	Silas Gould	203	2.80
	"	John Grieve.....	204	35.20
	"	Lewis Hodgson.....	205	16.00
Oct. 11.	"	J. M. W. Jones.....	206	89.00
	"	John L. Hermance.....	207	12.00
	"	A. W. Hawley	208	8.00
	"	Mrs. Rachel Hitchcock..	209	80
	"	Geo. M. Hawley.....	210	4.00
	"	Harris & Franklin	211	1.60
	"	Mrs. W. W. Holmes ...	212	80
	"	Mrs. D. H. Hull.....	213	80
	"	Lewis Hodgson.....	214	60.00
	"	Mrs. J. Hodge	215	3.60

Oct. 11.	By paid	W. Hawley...Order No.	216	$ 4.80
	"	A. C. Hate.....	217	4.80
	"	Geo. Canfield.....	219	75.00
	"	J. T. Ingram.....	220	4.00
	"	D. S. Lowe.....	221	16.00
	"	J. B. Long.....	222	4.00
	"	J. C. McBride.....	223	8.00
	"	B. F. Mickle.....	224	8.00
	"	Chas. J. McDonald. ...	225	48 00
	"	W. M. Morgan	226	52.00
	"	Miss Maggie Miller	227	40
	"	Geo. Mesner	228	80
	"	Mrs. A. N. McKenzie ...	229	80
	"	Miss Kate Monell.....	230	2.70
	"	P. J. Myers.....	231	12.00
	"	Theron Nye.....	233	32.00
	"	Newman & Fawell	234	16.00
	"	Burches & McLaughlin ..	235	63.00
	"	A. S. Patrick.....	236	51.00
	"	Mrs. Max Peters	237	4.00
	"	Wm. H. Pettitt.....	238	2.40
	"	Mrs. E. Payden	239	80
	"	W. T. Ramsdall.....	240	4.00
	"	Mrs. E. T. Roberts.....	241	80
	"	Richardson Co. Ag'l Soc'y	242	13.50
	"	Thos. Smith.....	243	12.00
	"	Jas. Stephenson	244	8.00
	"	E. M. Stockton.....	245	10.40
	"	Mrs. E. M. Stockton....	246	80
	"	G. W. Shidler..... ..	247	15.00
	"	M. M. Stover.....	248	2.40
	"	T. A. Stratton.....	249	2.40
	"	Mrs. T. L. Shaw.....	250	2.70
	"	L. E. Sinsabaugh	251	23.20
	"	A. D. Sage.....	252	2.40
	"	D. M. Tallman	253	24.00

Oct. 11.	By paid	M. L. Tuster,	Order No. 254	$ .40	
	"	Mrs. J. B. Trickey	255	.80	
	"	J. W. Wilcox,	256	12.00	
	"	Jacob V. Wolf	257	4.00	
	"	Woods & Lung	258	4.00	
	"	Mrs. J. B. Woods	259	8.10	
	"	Jas. Wheelan	260	2.80	
	"	Chas Whiffin	261	40	
	"	J. C. McBride	262	63.00	
	"	E. E. Moore	263	3.40	
	"	Miss Kate Monell	264	1.80	
	"	Mrs. Max Peters	265	80	
Oct. 19.	"	John Grass	266	10.00	
31.	"	H. T. Vose Sec. Otoe Co. P. Society	267	13.50	
Nov. 1.	"	E. M. Stockton	268	8.00	
	"	Theron Nye	269	4.00	
Dec. 14.	"	Baily, Bunker & Biddle	270	211.90	
16.	"	W. H. Dobson	271	20.00	
24.	"	C. Hartman	272	8.00	
	"	John E. Caulfield	273	1.50	
	"	Maveriett H. Messinger	274	12.75	
	"	American Express Co	275	18.35	
31.	"	J. P. Young	277	3.15	
1876 premium		Wm. J. Hyatt	312	8.00	
	To cash balance on hand				$ 51.32
	To note of McHugh & Vandaniker.				250.00

Respectfully submitted

CHRIS. HARTMAN, Treasurer.

Mr. Walker, from the auditing committee, submitted the following report, which on motion was adopted:

To the State Board of Agriculture:

Your auditing committee, to whom was referred the reports of the secretary and treasurer, respectfully report: We have exam-

ined the said reports, and have compared the list of orders drawn on the treasurer, as reported by the secretary, with the list of orders paid as reported by the treasurer, and also the said orders with lists reported. We have also compared the orders with the bills rendered, and have examined the bills allowed by the board of managers, and find them correct as reported.

We find that bills have been paid as follows:

Lumber used and left on the ground	$ 52 29
Hardware	13 30
Hardware	23 30
Labor in putting up stalls	20 00
Total	$108 89

which should have been paid by the citizens of Lincoln under their agreement with the state board.

In view of the fact that the citizens of Lincoln have expended a large sum of money and put the grounds in better condition than they have ever been before, we recommend the reimbursement for the payment of said amount be not exacted.

At the annual meeting of 1878 the board requested the secretary to examine his books with reference to the payment of an order of $100 in favor of J. W. Moore, treasurer, and report at this meeting. In obedience to this request the secretary has submitted the following:

We find that on the first day of January, 1878, there was in the treasury of the Board the sum of	$ 686.03
That there has been rec'd from small sources	7165.00
Making a total of	$7851.03
That there has been expended	7799.71
Leaving a balance in the hands of the treasurer of	$51.32

We also find a note of Messrs. McHugh and Vandanaker for the sum of $250.

We further find that there was on the first day of January, 1878, an appropriation in the State Treasury for the sum of $1,000, which was due the Board for the year 1875, and which had never been drawn.

All of which is respectfully submitted.

C. H. WALKER.

To the Auditing Committee State Board of Agriculture :

Your secretary, to whom was referred the question as to amount paid James W. Moore, late Treasurer of this Board, would report that Mr. Moore, under action of the Board, was paid $100 per annum. That he was paid for three years' services only, and that the orders for said payment were all included in one year, and settled last year; said amount was correct, as appears from the records of the society.

Respectfully,

D. H. WHEELER, *Secretary.*

January 21, 1879.

The Special Committee, consisting of the President, Secretary, and Treasurer, submitted the following report as to the improvements necessary upon the Fair Grounds, in addition to what was there during last State Fair, viz.:

GENTLEMEN OF THE BOARD: Your Special Committee respectfully suggest the following repairs and additions as necessary on the State Fair grounds for the successful holding of the State Fair in 1879, viz.:

1. The State Fair will require the fence rebuilt, or thoroughly repaired around the grounds.
2. We had 69 box stalls in 1878; we need 30 additional box stalls for 1879.
3. We had 131 open horse stalls in 1878; we will need 30 additional open horse stalls for 1879.
4. We had 126 cattle stalls in 1878; we will need 40 additional cattle stalls for 1879.
5. We will need 40 additional hog pens.
6. We will need for poultry double the room that we had in 1878 for the Fair of 1879.
7. We will need more shed room for machinery than we had in 1878.
8. We will need a full supply of water with full as many wells as we had last year.

9. We will need the full space furnished by both buildings used in 1878 for the exhibition of fruit, agricultural products, house plants, textile fabrics, musical instruments, etc., etc.

10. We will need the two buildings and grounds thoroughly cleaned up and put in shape for the exhibition, including stables, pens, etc.

11. We will need a small building for a Treasurer's office.

12. We will need three additional water-closets upon grounds.

Respectfully submitted,

M. DUNHAM,
CHRIS. HARTMAN,
D. H. WHEELER.

Geo. P. Tucker submitted the following:

At a special meeting of the Board of Directors of the Nebraska Exposition Association, called by the President January 22, 1879, the following resolution was offered and adopted:

Resolved, That this Association hereby tenders to the Nebraska State Board of Agriculture the use of the grounds and buildings of this Association for the purpose of holding the State Fair for the year 1879 free of charge, provided all improvements placed on said grounds shall be and remain the property of this Association. * * * * * * * *

CHAS. O. WHEDON, *Secretary*.

Mr. McBride submitted the following in connection with the proposition of Mr. G. P. Tucker:

LINCOLN, NEB., January 22, 1879.

We, the undersigned, guarantee that the sum of $700 shall be given to the State Board of Agriculture for improvements and repairs upon the Exposition grounds, provided that the improvements remain permanent.

J. C. MCBRIDE,
G. ENSIGN,
A. G. HASTINGS,
J. W. JACOBS.

On motion, Messrs. McBride, Hastings, and Jacobs were appointed a Committee to telegraph William Irving, Sup't. B & M. in Nebraska, and ask for rates over the railroad and leased lines for State Fair.

On motion, the Board adjourned to meet at 5 o'clock P.M.

LINCOLN, NEB., January 22, 1879.
5 O'CLOCK P.M.

The Board was called to order by the President, with officers and members present same as during morning session. The Committee appointed to confer with William Irving, Superintendent, submitted the following telegram relative to rates to State Fair, viz.:

OMAHA, January 22, 1879.

J. C. MCBRIDE, J. W. JACOBS, A. HUMPHREY—We cannot make same rates from Omaha as was made last season. Will give passenger rates for one fare from all stations for round trip. Will bill free both ways all samples of grain, fruit, vegetables, and other farm products. Other articles will be charged freight one way. We will run such excursion trains at special figures, as prospective business may seem to justify.

WM. IRVING.

Mr. Crounse offered the following resolution:

Resolved, That a committee, consisting of G. W. E. Dorsey, of Dodge, J. W. Johnson, of Cass, E. McIntyre of Seward, E. H. Grennell, of Washington and C. H. Walker, of Franklin, be and are hereby invested with full authority from this board to receive and entertain any and all propositions from the several portions of the State that may tender grounds, buildings, money or other inducements for holding the coming annual fair at any of said several localities, and that the committee shall, immediately after the tenth day of February next, decide upon the place for holding the fair, and report their decision to the secretary of the board as soon as made; and in reaching this conclusion the committee shall take into consideration the facilities each place may offer for gathering exhibits, securing the largest display, the greatest attendance, and supplying good hotel accommodations for those who may attend, and any matters which, in the judgment of the committee, will make the fair financially and otherwise successful; provided also that before deciding on any place the committee shall receive the guaranty of good and responsible parties, that the buildings, grounds, money, etc., shall be furnished as offered.

On motion the resolution was adopted by a vote of 13 in favor and 12 against.

MR. PRESIDENT:—As the State Horticultural Society have appointed a committee to memorialize the legislature, asking for the aid so much needed in publishing our reports, I therefore move

that a committee of three be appointed to act in conformation with the Horticultural Society in urging an appropriation to favor the agricultural and horticultural interests of the state. On motion Messrs. Dorsey, Walker, and Nye were appointed a committee upon the part of the State Board of Agriculture to memorialize the legislature on behalf of the agricultural and horticultural societies. On motion, adjourned until 9 o'clock to-morrow morning.

LINCOLN, NEB., January 23, 1879.
9 O'CLOCK A.M.

The board met pursuant to adjournment, called to order by the president, with officers as of yesterday and a quorum of members present.

On motion the board proceeded to select a general superintendent by ballot, which resulted in the election of Samuel G. Owen.

David Plasters, of Brownville, was unanimously elected chief of police.

Mr. Hastings, from special committee, submitted the following report relative to subject matter of Mr. Patrick's communication.

MR. PRESIDENT:—Your committee, to which was referred the appeal of A. S. Patrick in relation to the double team race, trotted at the last state fair, have had the same under consideration, and would report that in their opinion the race was not according to the rules as published by the state board of agriculture, and that no money should be paid on said race, and that the secretary be requested to demand from the persons, to whom any money has been paid on said race, to return the same to this society, which report was on motion adopted.

Mr. Hastings, from special committee upon appeal of G. A. C. Smith, viz.:

D. H. Wheeler, Esq., *Secretary Nebraska State Board of Agriculture:*

Dear Sir:—I hereby appeal from the decision of the judges of the 2:35 race trotted on the track of fair grounds on the 25th inst., said decision being, that my horse "Charley Douglas" was distanced in the first heat, the circumstances of which are as follows: The signal was given for the start, and when the horses were a short distance from the wire, the bell was sounded, and my driver, supposing it to be a recall, held up his horse, thereby losing ground, and came in far behind. After the heat, I claimed that he should be allowed to start in the next heat, and it was refused. I quote the following paragraph from rule 29, section 1, of the rules and regulations of the National Trotting Association: "*Provided, however*, that if the judges shall through any error give signal of recall *after having given the word, distance* shall be waived in that heat, except for foul riding or driving."

This, I think shows plainly that the dicision was contrary to the rule, and I claim that it should be reversed and that I am entitled to fourth money.

Very respectfully,

G. A. C. Smith.

Lincoln, Neb., Sept. 27, 1878.

submitted the following report.

Mr. President:—The committee to which was referred the appeal of Mr. G. A. C. Smith in relation to the horse known as "Charley Douglas" in the 2:35 race, have had the same under consideration, and would recommend that the appeal should be dismissed, which was on motion adopted.

Mr. McIntyre moved that the president have time until after the location of the state fair to announce the appointment of the Board of Managers. Carried.

On motion the board adjourned.

Daniel H. Wheeler, Secretary.

LINCOLN, NEB., Jan'y 22d, 1879.

Among other proceedings had at the annual meeting of the State Board of Agriculture at the above date, was the receipt and adoption of the following, offered by Hon. L. Crounse, viz.:

Resolved, That a committee of G. W. E. Dorsey, of Dodge, J. W. Johnson, of Cass, E. McIntyre, of Seward, E. N. Grennell, of Washington, and C. H. Walker of Franklin, be are and hereby invested with full authority from this Board to receive and entertain any and all propositions from the several portions of the state, that may tender grounds, buildings, money, or other inducements, for holding the coming Annual Fair at any of said several localities, and that the committee shall, immediately after the 10th day of February next, decide upon the place for holding the fair, and report their decision to the Secretary of the Board as soon as made; and in reaching their conclusion the committee shall take into consideration the facilities each place may offer for gathering exhibits, securing the largest display, the greatest attendance, hotel accommodations for those who may attend, and any matters which, in the judgment of the committee, will make the Fair, financially and otherwise, successful. Provided also, that before deciding on any place, the committee shall receive the guaranty of good and responsible parties that the buildings, grounds, moneys, etc., shall be furnished as offered.

After the adoption of the above, on motion of Gen. J. C. McBride, Messrs. Henry Stoll, of Gage, and Horace Allen, of Merrick, were added to the committee provided for in the foregoing resolution.

Pursuant to the foregoing resolution, Messrs. G. W. E. Dorsey, C. H. Walker, E. N. Grennell, Edmund McIntyre, J. W. Johnson, Horace Allen, and Henry Stoll met at the parlor of the Commercial Hotel, in Lincoln, Neb., at 4 P.M.

They were called to order by G. W. E. Dorsey, chairman, D. H. Wheeler acting as secretary.

The following proposition was received from J. W. Jacobs on behalf of the citizens of Lincoln, viz.:

Know all men by these presents, that we, the undersigned citizens of Lincoln, are held and firmly bound unto the State Board of Agriculture of the State of Nebraska, or its assignees, in the full sum of eight hundred dollars, for the payment of which sum, well and truly to be made on or before the fifteenth day of August next, we bind ourselves, our heirs, and assignees firmly by these presents. The said sum of eight hundred dollars to be paid to said State

Board of Agriculture at the time when the lumber and material is delivered on the fair ground to make the improvement specified in the specifications now in the hands of the secretary of the State Board of Agriculture, and also a sufficient amount to pay for one-half of the expense of the labor for putting up said improvements, provided said several sums do not exceed $800.00, and the whole sum to be paid in full before the fifteenth day of August A. D. 1879.

In witness whereof we have hereunto set our hands this 11th day of February, A.D. 1879.

J. J. IMHOFF.
A. HUMPHREY.
T. M. MARQUETT.
J. W. JACOBS.
NELSON C. BROCK.
T. P. QUICK.
A. E. TOUZALIN.

For and in consideration that John W. Jacobs do well and truly perform the conditions of a certain bond entered into by him on the eleventh day of Febrnary, 1879, with the State Board of Agriculture for the state of Nebraska, conditioned to place certain improvements on the fair grouuds near the city of Lincoln, then in such case the benefits accruing to the State Board by virtue of this contract are to accrue to said Jacobs, and this contract is assigned to him without reserve.

Witness our hands this the sixth day of March, 1879.

M. DUNHAM,
President State Board Agriculture.

Attest:

D. H. WHEELER,
Sec'y State Board of Agriculture.

Know all men by these presents, that we, J. W. Jacobs, as principal, and O. P. Mason, G. Ensign, and J. J. Imhoff, as sureties, are held and firmly bound unto the State Board of Agriculture of the State of Nebraska, in the penal sum of three thousand dollars, well and truly to be paid, we bind ourselves, our heirs, executors, administrators, and assigns, firmly by these presents.

The condition of the above obligation and bond is such that, whereas said J. W. Jacobs has this day entered into a contract in writing to erect, make, and complete certain improvements upon the fair grounds near Lincoln, Nebraska, on or before the 15th day of August, A.D. 1879; now, if the said J. W. Jacobs shall well and truly make, furnish, and complete said improvements in said contract contemplated, according to the true intent and meaning thereof, and in accordance with the specifications now in the hands of the Secretary of the State Board of Agriculture of the State of Nebraska, on or before the 15th day of August, A.D., 1879, this obligation shall be void, otherwise in full force and virtue of law and equity.

Witness our hands this 11th day of February, A.D., 1879.

J. W. JACOBS.
O. P. MASON, surety.
G. ENSIGN.
J. J. IMHOFF.

Article of agreement made and entered into this 11th day of February, A.D. 1870, by and between J. W. Jacobs, of Lincoln, Nebraska, of the first part, and the State Board of Agriculture of the State of Nebraska of the second part, witnesseth.

The said J. W. Jacobs covenants and agrees to furnish the lumber and material and erect, make, and construct the improvements on the fair ground near Lincoln, as in the specifications now in the hands of the Secretary of the State Board of Agriculture therein designated, and to complete the same on or before the 15th day of August, A.D. 1879, in accordance with said specifications aforesaid.

In consideration of which the said State Board of Agriculture of the State of Nebraska agree to, and hereby, by these presents, assign and set over unto said J. W. Jacobs the certain bond made, executed, and delivered to the said State Board of Agriculture by the citizens of Lincoln, and hereby, and by these presents, authorize the said J. W. Jacobs to collect the same and recover the proceeds thereof in accordance with the terms of said bond.

The said bond aforesaid is taken in full payment by said J. W. Jacobs for furnishing materials and making the improvements on the fair grounds, herein agreed to be made by said J. W. Jacobs.

In witness whereof we have hereunto set our hands and seals this 11th day of February, A.D. 1879.

J. W. JACOBS.

LINCOLN, NEB., Feb'y 11th, 1879.

To the Locating Committee State Board of Agriculture:

GENTLEMEN.—If the state fair for 1879 is located at Lincoln the Burlington & Missouri River Railroad Company in Nebraska agree to make the following rates of transportation:

1st. All agricultural products will be carried to the fair from points on our road free, and returned free.

2d. Stock for exhibition will be billed to the fair at regular rates, and returned free on a certificate of the Secretary of the State Board of Agriculture that the stock has been on exhibition, and in such case the charges paid from shipping point on our road to Lincoln will be refunded.

3d. Trotting stock will be billed same as above, with charges one way, and returned free, but charges paid to Lincoln will not be refunded.

4th. Passenger fare will be one fare for the round trip, on all regular trains during the continuance of the fair, from any station on the road to Lincoln.

5th. We will run excursion trains three days of the week during the fair between Omaha and Lincoln, at one dollar and fifty cents for the round trip.

WM. IRVING, *Superintendent.*
By J. D. MCFARLAND.

LINCOLN, Jan'y 24, 1879.

The A. & N. R. R. Co. will carry persons attending the state fair at 60 per cent of regular rates. Also will run excursion trains

and charge about 40 per cent. All articles on exhibition will be returned free.

J. E. Utt.

The following proposition was received from the citizens of Omaha, by the hands of Chris Hartmau, viz.:

To the State Board of Agriculture and the Committee on location:

On condition that the state fair for 1879 is located at Omaha, the undersigned agree to put up on the fair grounds at Omaha exhibit buildings of ample size—grand stand, treasurer's, secretary's, board of manager's, and newspaper reporters' offices, and sufficient number of stalls in addition to those already on the grounds; water facilities, and such other improvements as may be necessary for the successful running of the state fair.

All improvements to be made by the committee of citizens, under direction of the president, treasurer, secretary, and board of managers of the State Board of Agriculture, and to be completed by September 1st, 1879. Said grounds and improvements are tendered to said board for the purpose of holding their annual state fair, free of expense.

Know all men by these presents, that we are held and firmly bound unto Martin Dunham, President of the State Board of Ag riculture of the State of Nebraska, and his successors in office, in the penal sum of ten thousand dollars, for which payment well and truly to be made, we do hereby bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that whereas the above obligors have tendered to the State Board of Agriculture the foregoing proposition in writing, now if the said obligors shall well and truly keep and fulfill said proposition, then this obligation to be void, otherwise to be and remain in full force and effect.

In witness whereof we have hereunto set our hands this eighth day of February, A.D. 1879.

D. T. Mount.
Jas. E. Boyd.
H. P. Deuel.
A. Cruickshank & Co.
I. I. Beard & Bro.
J. J. Brown.
Frank Murphy.
W. A. Paxton.
Ben. Gallagher.
Stephens & Wilcox.
J. G. Hartman.
E. C. McShane.
McNamara & Lucas.
M. W. Kennard.
R. Daniels.
R. A. Brown.

Omaha, Feb'y 10th, 1879.

C. Hartman, Esq., Treas. State Board of Agriculture, Omaha, Nebraska:

Dear Sir—In reply to your personal inquiries, I would respectfully state that if the state fair is held at Omaha this year, we will, upon goods shipped to same via the U. P. R. R., make the same special provision that was made for such shipments last year.

Yours Truly,
E. P. Vining,
Gen'l Fr't Ag't.

Omaha, Neb. Feb. 10th, 1879.

C. Hartman, Esq.:

Dear Sir—We will make the same rates for state fair at Omaha as we gave last year, that is, $1.00 for the round trip from Fremont and Wahoo, with proportionate rates from points farther

west. Half rates between Council Bluffs and Omaha, or $1.00 for the round trip—including admission to the fair.

Yours Truly,

THOS. L. KIMBALL,

G. P. & T. A.

CHICAGO, Jan'y 31st, 1879.

H. P. Deuel, City Ticket Agent, Omaha, Neb.:

DEAR SIR—I have your favor of Jan. 22d. If the state fair of Nebraska is held at Omaha, we will make a rate for the distance you name of two cents per mile each way. Please inform me what conclusion is arrived at, and the day the fair is to be held.

Yours truly,

E. ST. JOHN,

G. P. & T. A.

CHICAGO, Jan. 30th 1879.

H. P. Deuel, Agent Omaha & Chicago R. R., Omaha, Neb.:

DEAR SIR—Your letter of the 27th inst. to Mr. Stennett, has been referred to me, and in reply I beg to say that if the Nebraska state fair is located at Omaha the next three years, we shall be pleased to make the same concessions in the matter of passengers and freight that we have hitherto done for the Iowa state fair, namely: Passengers two cents per mile for the round trip. Articles and live stock for exhibition will be charged full rates to the fair, but will be returned free of charge to point of shipment, provided the property has not changed ownership. This concession will apply only on the first 150 miles of our road east of the Missouri river.

Yours truly,

M. M. OUYBETT.

CHICAGO, Jan. 31.

H. P. Deuel:

We will make a rate of two cents per mile for the Nebraska state fair as far east as Chariton. The R. I. and Northwestern have agreed to this.

JAMES R. WOOD.

MISSOURI VALLEY, IOWA, Feb. 8th, 1879.

H. P. Deuel, Esq., General Ticket Agent Omaha, Neb.:

DEAR SIR—In reply to your favor of the 4th inst., would say the Sioux City & Pacific R. R. will make half rates on freight and passengers from all stations, on account of the Nebraska state fair to be held at Omaha in 1879. Provided the legislature does not prohibit it, or reduce our rates one half, or to send a low figure that we cannot afford to do it.

Yours truly,
F. C. HILLS,
G. F. & P. A.

OMAHA, NEB. Feb. 8th, 1879.

Hon. Christ Hartman, Treas. State Board of Agriculture, Omaha, Neb.:

DEAR SIR—In reply to yours of this date I will name you the following rates on freight and passengers for state fair for 1879, provided the same is held in Omaha, otherwise the rates herein named are null and void.

All freight for exhibition, other than live stock, if shipped at owner's risk, will be carried free—owner to load and unload. Live stock will be charged rugular rates to Omaha, and returned free, on certificate from secretary of the board that the same were on exhibition. Passenger rates: Calhoun to Omaha and return, 75 cents; Blair to Omaha and return, $1.00; Herman to Omaha and return, $1.25; Tekamah to Omaha and return, $1.50. This is equal to about 1 3-5 cents per mile. Hoping that the above may be entirely satisfactory, I am

Yours truly,
J. BUDD,
G. F. & T. A.

After hearing remarks from sundry parties before the committee relative to the location of the fair, the committee retired to consult.

After some time spent in consultation, the committee subse-

quently reported to the secretary that the committee had decided upon Lincoln as the location for the next annual fair.

D. H. WHEELER,
Secretary.

OMAHA, NEBR., March 5, 1879.

Pursuant to the following call of the President, viz.:

Office of President of Nebraska,
State Board of Agriculture,
OMAHA, Feb'y. 19th 1879.

To the Members of the State Board.

WHEREAS, since the January meeting of the state board, important questions have arisen, vitally affecting the interests of the board, as well as the interests of agriculture of the State as represented by our organization, questions which in my judgment imperatively demand the meeting of the state board to consider and settle.

THEREFORE, by virtue of section 10, chapter 2 of the revised statutes, and section 3 of the by-laws adopted by the board giving the president power to call meetings of the board whenever he shall deem it expedient,

I do hereby call a meeting of the said board, to be held at the "Withnell House" in the City of Omaha, at 4 o'clock P.M. of the 5th day of March next, and I do earnestly request that each member of the board be in attendance for the purpose of considering and passing upon all questions, matters, and things affecting the interests of the board which may be presented for consideration.

MARTIN DUNHAM, *President.*
D. H. WHEELER, *Secretary.*

The State Board of Agriculture convened at the city council chamber in Omaha, at 5 o'clock P.M., and the following members and ex-officio members were present, viz.:

MEMBERS.

M. Dunham, President.
C. Mathewson, 1st Vice-President.
R. W. Furnas, 2nd Vice President.
Chris. Hartman, Treasurer.
D. H. Wheeler, Secretary.

E. N. Grennell, M. Stocking, A. D. Williams, C. H. Walker, R. Daniels, H. C. Stoll, J. T. Clarkson, J. B. Dinsmore, S. Barnard, J. C. McBride, G. W. E. Dorsey, D. T. Drake, Theron Nye, A. G, Hastings, J. W. Jacobs, Horace Allen, H. D. Perky, L. A. Kent, and J. F. Kinney.

EX-OFFICIO MEMBERS.

J. D. Gage,	President	Franklin	County	Agric'l Society.
J. Jensen,	"	Fillmore	"	"
M. Kieran,	Representative	Kearney	"	"
J. T. Clarkson,	"	Colfax	"	"
S. G. Owen,	"	Lancaster	"	"
A. K. Marsh,	President	Clay	"	"
M. Stocking,	"	Saunders	"	"
I. S. Lowe,	"	Saline	"	"
Dan. H. Wheeler	"	Cass	"	"
W. Gill,	"	Seward	"	"
C. H. Walker,	Representative	Harlan	"	"
W. Eaton,	"	Buffalo	"	"

A quorum being present the board was called to order by M. Dunham, President.

J. C. McBride moved that the presidents or delegates from County Agricultural Societies be and they are hereby invited to participate in the proceedings of the board at this meeting, and be entitled to speak and vote upon any question which may come before the board.

Motion carried by an unanimous vote.

Mr. Weeeler moved that a committee of five be appointed to examine and report upon the premium list, at 7:30 P.M. The motion was adopted and the president appointed Messrs. J. T. Clarkson, R. W. Furnas, A. D. Williams, J. C. McBride, and C. Mathewson as such committee. Mr. Dorsey offered the following resolution, viz.:

Resolved, That a committee of five be appointed by the President to confer with J. E. Boyd, W. A. Paxton, Ed. McShnne, and other citizens of Omaha, having in charge the matter of getting up a District Fair at Omaha, and respectfully request an agreement as to the date of holding said District Fair, so that it will not conflict with the time of holding the State Fair.

The resolution was adopted and the President appointed as such committee: Messrs. Dorsey, Owen, Walker, Dinsmore, and Perky.

The committee were requested to make report of their conference this evening. On motion, the Board adjourned until 8.30 P.M.

CITY COUNCIL CHAMBER,
Omaha, Neb., March 5th, 1879, 8.30 P.M.

The board was called to order by the President. Officers and members present, the same as at adjournment. Mr. Clarkson, from the committee upon premium lists, submitted the following minority report, viz.:

Mr. President:

A minority of your committee appointed to take into consideration a revision of the premium list for the coming fair, would report that after due consideration they recommend that the board of managers be instructed to reduce the premium list in such manner as may seem most proper to them, to the extent of twenty (20) per cent of the entire amount of premiums offered.

J. T. CLARKSON.
CHAS. MATHEWSON.

Gov. Furnas from committee on premium list submitted the following majority report, viz.:

Mr. President:—A majority of your committee appointed to revise the premium list for 1879, would respectfully recommend that the premium list remain as it has heretofore been prepared and adopted.

R. W. Furnas.
J. C. McBride.
A. D. Williams.

Mr. Hastings moved that the majority report of the committee be adopted.

Mr. Clarkson moved to amend the motion by adopting the minority report of the committee. After some discussion, by permirsion, Mr. Clarkson withdrew the minority report, whereupon the majority report was adopted.

Gov. Furnas offered the following resolution:

Resolved, That the Nebraska State Fair be held at Omaha, for the years 1880, 1881, and 1882, provided that point provide the State Board sufficient accommodations for holding said fair free of expense to the board. Such accommodations to be agreed upon by the board of managers, the State Board, and a committee appointed for such purpose, and the people of Omaha or a committee appointed by them for such purpose.

Judge Kinney moved the adoption of the resolution, upon which the ayes and nays were called.

Those voting in the affirmative were: Messrs. Jacobs, Allen, Perky, Kent, Kinney, Dunham, Mathewson, Furnas, Hartman, Grennell, Stocking, Walker, Daniels, Stoll, Clarkson, Dinsmore, Barnard, McBride, Dorsey, Drake, Nye, Wheeler, Gage, Jensen, Kieran, Owen, Marsh, Gill, and Eaton—Total, 29.

Voting in the negative were Messrs. Hastings and Williams—2.

Mr. Dorsey moved that the secretary be instructed to invite Col. Champion S. Chase to deliver the annual address. Carried. On motion the treasurer was instructed to pay the expense of the del-

egates in attendance upon this special meeting of the board; and the secretary was instructed to draw an order for the amount, when it was ascertainted what said amount is.

On motion the secretary was instructed to request the superintendents of the several railroads in the state to grant annual passes to the officers and board of managers of the State Board of Agriculture.

The president announced the following as a board of managers for the ensuing year: A. G. Hastings, Edmund McIntyre, J. F. Kinney, G. W. E. Dorsey, and J. W. Johnson. On motion the appointment of managers was confirmed.

On motion the board adjourned.

PROCEEDINGS, 1879.—SEPTEMBER.

LINCOLN, Sept. 11, 1879.

Board convened in compliance with provisions by law. Present:

OFFICERS, Martin Dunham, President, R. W. Furnas, Charles Mathewson, Vice-Presidents, D. H. Wheeler, Secretary, Chris. Hartman, Treasurer.

MEMBERS, Stoll, Dinsmore, Walker, Kinney, Drake, Nye, Johnson, Allen, Kent, Daniels, Grennell, Barnard, Williams, Dorsey, Lyman, McIntyre, Hastings, Eaton, Perky, Jacobs.

The following resolutions by Mr. Dorsey adopted:

Resolved, That this State Board of Agriculture can do good work in advancing the material interests of the state by collecting and publishing items of crops grown and harvested, yield, number of bushels shipped, number of emigrants, as well as other items of general interest. Therefore further

Resolved, That the Secretary of this Board be instructed to collect and publish at least once in each month, such items of interest as indicated as will attract public attention, and aid in inducing those seeking new homes in the west to examine the advantages offered by Nebraska. Not to cost over $100.

Mr. McBride suggested that the Fair be held over until Monday next. After discussion it was decided adversely.

On motion of Mr. Kinney, the citizens of Lincoln were requested to close their business houses on to-morrow to attend the fair.

Mr. McBride proposed to print 7,000 copies of premium list free, for use of the board. Proposition accepted.

Time for holding next fair fixed to commence on Monday, Sept. 20, 1880.

Vote of thanks tendered Col. Chase for his able address, and the secretary ordered to have printed for distribution 2,000 copies in pamphlet form.

Board adjourned.

M. DUNHAM, *President.*

DANIEL H. WHEELER, *Secretary.*

PREMIUMS AWARDED

STATE FAIR, SEPTEMBER, 1879.

Class 1—Horses.

Lot 1—Thoroughbreds.

Best stallion, 4 years old and over, J. W. Eller.
Second best, " " H. Pickerel.
" " colt over 2 years and under 3, J. W. Jacobs.
" " sucking stallion colt, Ed. M. Stockton.
Best Filly, 3 years and under 4, J. W. Jacobs.
Second best, " " J. W. Jacobs.
" " mare 4 years and over, J. W. Jacobs.

Lot 2—Registered Horses.

Best stallion, 4 years and over, J. F. Kinney.
Second best, " " J. O. Lantz.
Best stallion, 3 " and under 4, Woods & Curry.
Second best, " " Ed. Reed.
" " 2 " " 3, W. T. Randall.
" " 1 " " 2, I. N. Leonard.
" " Sucking colt, "
" " Mare 4 years and over, "

Lot 3—Roadsters.

Best stallion, 4 years and over, S. Woodmanse.
Second best, " " Fry & Hartman.
Best stallion, 3 " and under 4, Walter Loyd.
Second best, " " Jos. Mills.
" " 2 " " 3, A. D. Cook.

Best mare, 4 years and over, J. O. Frantz.
Second best, " " J. A. Barnes.
" " 3 " and under 4, Fry & Hartman.
Best mare 2 years and under 3, A, D. Cook.
Second best, " " A. T. Metz.

Lot 4—Draft Horses.

Best stallion, 4 years old and over, Fry & Hartman.
Second best, " " Agricultural Farm.
Best stallion, 3 " and under 4, Jos. Philips.
Second best, " " Wheeler & Hinman.
Best stallion, 2 " " 3, S, Dungan.
Second best, " " Jos. Phillips.
" " 1 " " 2, Lewis Hodgson.
Best colt, under 1 year, " "
Second best, " E. M. Stockton.
Best mare, 4 years and over, Lewis Hodgson.
Second best, " " H. C. Stoll.
Best mare 2 years and under 3, Lewis Hodgson.
Second best, " " H. C. Stoll.
Best mare, 1 " " 2, Lewis Hodgson,
Second best, " " C. H. Gould.
Best sucking colt, S. Wells.
Second best, " H. C. Stoll.

Lot 5.—Horses for all purposes.

Best stallion, 4 years and over, Samuel Dezea.
Second best, " " E. W. Allen.
Best stallion, 3 years and under 4, "
Socond best, " " H. Brown.
Best stallion, 2 " " 3, Jas. Bell.
Second best, " " J. Mills.
Best stallion, 1 " " 2, J. Richardson.
Second best, " " C. Page.
" " colt, under 1 year, Lewis Hodgson.

Best mare, 4 years old and over, Lewis Hodgson.
Second best, " " A. Peck.
" " 3 years and under 4, J. R. Stewart.
Best mare, 2 " " 3, A. Peck.
Second best, " " A. Metz.
" " 1 " " 2, Lewis Hodgson.
Best mare sucking colt, A. Peck.
Second best " " J. P. Brown.

Lot 6.—*Saddle Horses.*

Best mare, G. C. M'Gee.
Second best, H. C. Dawson.
Best Gelding, "
Second best, J. W. Brown.

Lot 7.—*Driving Horses.*

Best pair mares to harness, O. J. Thomas.
Second best, " " R. H. Oakley.
Best pair Geldings " G. Ensign.
Second best " " Thos. Thomas.
Best single mare " S. Smiley.
" " Gelding " D. S. Lowe.
Second best " " T. C. Callahan.

Lot 8.—*Sweepstakes.*

Second best stallion showing 5 colts either sex, yearlings or under Lewis Hodgson.
Best mare, showing 2 colts, Lewis Hodgson.
" " any age, A. T. Welty.
" stallion, " I. N. Leonard.
" gelding, " D. S. Lowe.

Lot 9.—*Mules and Asses.*

Best jack, any age, D. W. Tallman.
Second best, " J. B. Wilson.

Second best jennett, any age, J. B. Wilson.
Best jack, with three colts, " "
Second best, " " " "
" " pair mules 3 years and over, A. Dorsey.
Best " " under 3, J. B. Wilson.
Second best, " " " " "
Best mare with mule colt, " "
Second best, " " Wm. Chisten.
" " single mule, over 3 years, J. B. Wilson.
Best " " under 3 " Geo. Griffis.
Second " " " " " A. Dorsey.
Best mule colt, M. Dondryden.
Second best mule colt, J. J. B. Wilson.

Lot 10.— *Walking Horses.*

Best walking stallion, H. C. Dawson.
" " mare, E. M. Stockton.

Class 2—Cattle.

Lot 1.—*Thoroughbred Shorthorns.*

Best bull, 3 years and over, R. Daniels.
Second best, " " "
Best bull, 2 " and under 3, W. H. B. Stout.
Second best, " " R. Daniels.
Best bull, 1 " " 2, C. F. Retzlaff.
Second best, " " S. Degan.
Best bull calf, R. Daniels.
Second best, Dawson & McBride.
Best cow, 3 years old and over, Dawson & McBride.
Second best, " " R. Daniels.
Best cow, 2 " and under 3, "
Second best, " " T. H. Leavitt.
Best cow 1 " " 2, R. Daniels.
Second best, " " "

Best cow calf, R. Daniels,
Second best, "
Best herd 1 bull 4 cows, R. Daniels.
Second best, " " Dawson & McBride.

Lot 2.—Thoroughbred Devons.

Second best bull, 3 years old and over, Edwards & Page.
Best " 3 " " under 3, Orr & Thomas.
Second best bull calf, " "
Best cow, 3 years and over, " "
Second best, " " Edwards & Page.
Best cow, 2 years and under 3, Orr & Thomas.
Second best " " " "
Best cow, 1 year and under 2, " "
Second best, " " " "
Second best cow calf, Edwards & Page.
Best Herd 1 bull 4 cows, Orr & Thomas.
Second best, " " Edwards & Page,

Lot 3.—Alderneys.

Best bull, 3 years old and over, J. O. Dearborn.
Second best, " " J. W. Jacobs.
Best bull, 2 " and under 3, Newman & Fawell.
Second best, " " W. T. Moore,
Best bull, 1 " " 2, J. W. Jacobs.
Second best, " " J. O. Dearborn.
Best bull calf, W. T. Moore.
Second best calf, J. O. Dearborn.
Best cow, 3 years old and over, J. W. Jacobs.
Second best, " " S. B. Bingham.
Best cow, 2 " and under 3, J. W. Jacobs.
Second best, " " J. O. Dearborn.
Best cow, 1 " " 2, J. O. Dearborn.
Second best, " " W. T. Moore.
Best cow calf, J. W. Jacobs.
Second best calf, J. O. Dearborn.

Lot 4.—*Ayrshires.*

Second bull, 3 years old and over, Agricultural Farm.
" " 2 " under 3, " "
" " calf " "

Lot 5.—*Galloways.*

Best bull, 3 years old and over, Agricultural Farm.
Second best, " " " "
" cow, " " " "
" " 2 " and under 3, " "
" " calf, " "

Lot 7.—*Herefords.*

Best bull, 2 years old and under 3, T. H. Cavanaugh.
" " 1 " " 2, " "
" " calf, " "
" cow, 3 years old and over, " "
Second cow, " " " "
Best " 2 " and under 3, " "

Lot 8.—*Grade Cattle.*

Best cow, 3 years old and over, Dawson & McBride.
Second best " " O. Gramlich.
Best cow, 2 " and under 3, " "
Second best " " " "
" 1 " " 2, W. H. B. Stout.
Best cow calf, O. Gramlich.
Second best, " "

Lot 9.—*Sweepstakes.*

Best bull, any age or breed, W. H. B. Stout.
Best cow, " " R. Daniels.
Best bull with 3 of his calves, " "
Best cow with 3 of her calves, " "

Best herd, bull and 4 cows, R. Daniels.
Best herd, 5 calves, " "

Lot 12.—*Fat Cattle.*

Best fat ox, any age, R. Daniels.
Second best, " " "
Best fat cow, " " "
Second best, " T. E. Gladhill.
Best fat lot 5 young heifers, R. Daniels.
Best fat herd, 8 head, " "
Second best, " T. E. Gladhill.

CLASS 3.—SHEEP.

Lot 1.—*Cotswolds.*

Best ram, 1 year old and under 2, T. C. Cavanaugh.
Second best, " " " "
Best ram lamb, Allen Barber.
Second best, T. C. Cavanaugh.
Best pen, 3 ewes 1 year old, R. Daniels.
Second best, " " T. C. Cavanaugh.
Best pen, " lambs, R. Daniels.

Sweepstakes.

Best ram, any age, R. Daniels.
Best ewe, " " "

Lot 2.—*Southdowns.*

Best ram, 2 years old, C. Pugsley.
Best pen, 3 ewes, 2 years old, C. Pugsley.
Best ram lamb, C. Pugsley.
Best ewe lamb, " "

Sweepstakes.

Best ram any age, C. Pugsley.
Best ewe, " " "

Lot 3.—*American Merinos.*

Best ram, 2 years old and over, A. B. Stewart.
Second best, " " Slater Bros.
Best ram, 1 " and under 2, C. Pugsley.
Second best, " " Slater Bros.
Best ram, under one year, Myers & Long.
Second best, " " Slater & Long.
Best pen, 3 ewes 2 years old, Slater & Long.
Second best, " " Myers & Long.

Sweepstakes.

Best ram of any age, C. Pugsley.
Best ewe, " " "

CLASS 4.—SWINE.

Lot 1.—*Berkshires.*

Second boar, 2 years old and over, J. W. Jacobs.
Best " " and under 3, " "
Second " " " W. H. B. Stout.
Best " 6 months " 12, A. E. Bowen.
Second " " " Dawson & McBride.
Best " 2 " " 6, W. H. B. Stout.
Second " " " T. H. Leavitt.
Best sow, 2 years old and over " "
Second " " " Dawson & McBride.
Best " 1 " and under 2, " "
Second " " " H. C. Stoll.
" " 6 months " 12, Dawson & McBride.
" " 2 " " 6, A. E. Bowen.
" " with not less than 5 pigs, Dawson & McBride.

Lot 2.—*Poland, Moore Magie.*

Best boar, 2 years old and over, T. C. Clark.
Second " " " H. C. Stoll.
Best, 1 " and under 2, Dawson & McBride.
Second " " " A. Brichen.
Best " 6 months " 12, A. S. Williams.
Second " " Dawson & McBride.
Best 2 " " 6, "
Second " " T. C. Clark.
Best sow, 2 years old and over, H. C. Stoll.
Second " " M. Howe.
" 1 " and under 2, Dawson & McBride.
Best 6 months " 12, "
Second " " T. C. Clark.
" 2 " " 6, Dawson & McBride.
" and sucking pigs, "

Lot 4.—*Chester Whites.*

Second boar, 1 year and under 2, H. C. Stoll.
Best " 2 months " 6, A. K. Shephard.
Second " " " H. C. Stoll.
" sow, 2 years and over, "
Best " 1 year and under 2, C. P. Mayfield.
Second " " H. C. Stoll.
Best " 6 months and under 12, C. P. Mayfield.
Second " " H. C. Stoll.
Best " 2 " 6, A. K. Shephard.
Second " " H. C. Stoll.
" " and 5 pigs, "

Lot 6.—*Sweepstakes.*

Best boar of any age and breed, J. W. Jacobs.
" sow " " H. C. Stoll.
" pair pigs 6 months old, Dawson & McBride.

Best pen shoats 9 months old, T. C. Clark.
" 1 boar 4 sows, H. C. Stoll.
" 5 hogs, Dawson & McBride.
" litter pigs 6 months old, Wm. H. B. Stout.

Class 5.—Poultry.

Lot 1.—*Asiatic.*

Best Light Brahma fowls, A C. Hart.
Second " H. J. Butt.
Best dark " G. P. Browne.
" chicks, "
Best Buff Cochin fowls, H. C. Butt.
Second " " A. C. Hart.
Best Buff Cochin chicks, H. C. Butt.
Second " " A. C. Hart.
Best Partridge Cochin fowls, H. C. Butt.
Second " G. P. Browne.
Best white " A. C. Hart.
Second " " G. P. Browne.
Best black " "
" chicks, "

Lot 3.—*Spanish.*

Best black Spanish, white-face fowls, Geo. Gregory.
Second " " G. P. Browne.
Best white Leghorn fowls, Paul Marlay.
" " chicks, G. P. Browne.
" brown " fowls, A. C. Hart.
Second " " " G. H. Jackson & Co.

Lot 4.—*Hamburgs.*

Best silver penciled fowls, A. C. Hartley.
" chicks, "

Best golden penciled fowls, G. P. Browne.
" silver spangled fowls, "
" game bantam " G. H. Jackson & Co.

Lot 6—*French.*

Best Houdan fowls, A. C. Hart.
Second " H. C. Butt.
Best " chicks, G. M. Fairfield.
" Plymouth Rock fowls, G. P. Browne.
Second " " J. Wheeler.
Best game " G. P. Browne.
" chicks, J. Wheeler.

Lot 9.—*Ducks.*

Best white crested ducks, I. N. Wheeler.
" Rouen " H. C. Butts.

Lot 11.—*Pea Fowls.*

Best pair Pea fowls, C. S. Retzlaff.

CLASS 6.—FARM PRODUCTS.

Lot 1.—*Grains and Seeds.*

Best sample red winter wheat, Clay County Ag. Society.
" " spring " " "
" " oats, Clay County Ag. Society.
" " Fall barley, " "
" " Pop corn, " "
" " white corn, Asylum Farm.
" " yellow corn, Lancaster County Farm.
" " corn in stalk, T. B. Ward.

Lot 2.—*Vegetables.*

Best sample early Irish potatoes, Asylum Farm.
" late " Lancaster County Farm.

Best sample sweet potatoes, Lancaster County Farm.
" beets, " "
" cabbage, State Ag. Farm.
" tomatoes, Asylum Farm.
Best lot pumpkins, J. F. Adams.
" squashes, A. Barber.
" watermelons, Asylum Farm.
" muskmelons, J. F. Adams.
" display of vegetables, Lancaster County Farm.

Lot 3.—*Butter, Cheese, Cakes, etc.*

Best barrel spring wheat flour, Cooper & Hudson.
" 10 pounds roll butter, J. S. Hermance.
" 2 loaves corn bread, Mrs. Ziemer.
" sponge cake, Mrs. Barber.
" snow " " Doolittle.
" pound cake, " "
" silver " Miss "
" gold " " "
" doughnuts, Mrs. Fuller.
" gallon sorghum molasses, O. O. Horton.

Class 7.—*Arbor Day.*

(Not reported on until winter meeting.)

Class 8.—*Mechanical Arts.*

Best skeleton wagon, E. Reed, Omaha, Nebraska.
" hedge layer, J. A. Bumstead, Lincoln, "
" sash and doors, Jones and Munson, Lincoln, Nebraska.
" mixed paints, " " " "
" corn sheller, W. W. Brown, " "
" iron fence, Lincoln Fence Company, " "
" farm wagon, H. Keefer " "
" spring wagon, H. Keefer, " "
" hay gatherer, H. Grebe, Omaha, "

Best furniture, Dewey & Stone, Omaha, Nebraska.
" hay knife, H. Holt & Co., Walbon, Maine.
" open buggy, J. Donnelly, Crete, "
" phaeton, G. Ensign, Lincoln "
" farming, W. W. Dudley, Sutton, "
" washing machine, Granter & White, Lincoln, "
" wire fence guard, A. Seaver, Hickman, "
" iron fence, A. & H. Brown, Lincoln "
" printing and book binding, State Journal Co., Lincoln, Neb.,
" bound books, State Journal Co., " "
" bridle, F. A. Clewell, Sutton, Nebraska.
" corn husker, J. G. Johnson, Carthage, Illinois.
" horse collar fastener, S. W. Thurbur, Lincoln, Nebraska.
" barbed wire fence, G. C. Baker & Co. DesMoines, Iowa.
" iron fence post, " " " "
" top buggy, Fish Bros. Racine, Wisconsin.
" force pump, Mast, Foose & Co., Springfield, Ohio.
" stone ware, Louisville Co., Louisville, Nebraska.
" pottery, " " "
" fire brick " " "
" Howe scales, Hovey & Peck, Lincoln, "
" fanning mills, H. Keefer, " "
" sickle grinder, " " "

Committee call special attention to exhibit of pottery and fire brick made by the Louisville Stone Ware Company, Louisville, Cass County, Nebraska, as the beginning of an important manufacturing interest of the State.

Class 10.—*Fine Arts.*

Best oil painting made in Nebraska, Miss Ida Dobson, Lincoln.
" portrait in oil, " " "
" colored wax work, Mrs. O. C. Bell, Lincoln, Nebraska.
" feather wreath, " " " "
" agricultural wreath, " " " "
" fruit painting in oil, Miss E. Richardson, " "
" fancy painting, " " "

Best bird painting in water colors, Miss E. Richardson, Lincoln.
" plain photographs, Wheat & Drain, Lincoln, Neb.
" 12 stereoscopic views, " " " "
" display photographs " " " "
" specimen hair work, Mrs. A. C. Ziemer, " "
" ornamental work with indelible fluids, Rebecca A. Ray, Lincoln, Nebraska.
" oil painting, Miss Sophia Reese, Nebraska City, Nebraska.
" animal painting " " " " "
" crayon picture, Mrs. M. E. Sweetland, Nebraska City, Nebr.
" sea shell in oil, Mrs. E. E. Cunningham, Lincoln, Nebraska.
" specimen ornamental penmanship, C. C. Chase, Omaha, Neb.
" fern leaf motto, Mrs. D. B. Alexander, Lincoln, Nebraska.
" card boord cross, " " " "
" hair work, Mrs. Lagerquest, Kearney, "
" pyramid shell work, Mrs. C. B. Parker, Lincoln, "
" portrait in crayon, M. A. Waterman, Milford. "
" marble sculpture, Chas. Neidhart, Brownville, "
" wax work, S. M. Burr, DesMoines, Iowa.
" autumn leaves, " " "
" wax begonia " " "

Class 11.—Textile Fabrics.

Lot 1.—*Household Fabrics.*

" display of carpets, Dewey & Stone.
" rag carpet, Mrs. C. C. Godman.
" patchwork quilt, Mrs. O. C. Bell.
" fancy work basket, " "
" lady's stocking, Mrs. A. T. Kenyon.
" hand made boots, Fred Endres.

Lot 3.—*Needle Work.*

" best night dress, Miss Clara Morrison.
" silk quilt, Mrs. E. T. Tolman.

Best lamp mat, Mrs. E. T. Tolman.
" Wool hood, Miss Rose Reese.
" embroidered night dress, Mrs. R. N. Miller.
" darning and repairing, Miss Cora Fisher.
" lace tidy, Minnie Adams.
" suit underclothes, Mrs. D. A. Bantley.
" pin cushion, " "
" tidy in cotton, Mrs. J. J. Imhoff.
" crochet work, Mrs. Rouser.
" apron, "
" crochet shawl, Frank Roberts.
" counterpane, Mrs. S. M. Clark.
" toilet set, Kate Eastover.
" worsted quilt, E. Craig.
" display fancy goods, Miss Clara Wheeler.
" hand-made lace, Mrs. E. C. Waldron.
" air castle, Mrs. C. D. Beach.
" rag rug, Mrs. D. B. Alexander.
" red tidy, " "
" embroidered skirt, Nettie Martin.
" tidy in wool, Mrs. J. A. Huddleson.
" slipper case, Mrs. C. E. Gates.
" patch work silk, Mrs. C. M. Parker.
" " calico, " Addis.
" lamp mat, Mrs. J. A. Huddleson.

Lot 5.—Ornamental Needle-Work.

Best infant's embroidered skirt, Mrs. J. McCullough.
" silk embroidered picture, St. Benedictine Sisters.
" worsted " " Miss Jesse White.
" piano cover, Mrs. J. S. Morton.
" table cover, " "
" Japanese tidies, Mrs. J. S. Morton.
" embroidered tidy, " "
" easy chair, " "
" Silk embroidered tidy, Mrs. J. J. Hochstetler.

Best infant's skirt, Mrs. T. P. Koop.
" bead embroidered cushion, Mrs. T. P. Koop.
" needle work, J. J. Imhoff.
" carriage afghan, Mrs. Rouser.
" embroidered linen handkerchief, Mary E. Hickok.
" infant's afghan, Mrs. Marquett.
" foot rest, Mrs. A. W. M'Laughlin.
" sofa pillow, " "
" lambrequin, " "
" ottoman, Mrs. C. E. Yates.
" chemise, Mrs. A. C. Ziemer.
" stand cover, "
" motto in silk, Mrs. Dr. Fuller.
" shawl strap, Mrs. J. N. T. Jones.
" worsted toilet set, Mrs. J. B. Leslie.
" ornamental toilet set, Mrs. L. B. Heckbroad.

Class 12.—*Natural History.*

Best conchological exhibition of not less than fifty specimens, from Nebraska, Lawrence Bruner.
Best collection illustrating herpetology, Lawrence Bruner.
" display botanical specimens, Charles Hunter.
" botanical cabinet for schools, William Hawley.

Class 13.—*Agricultural Societies.*

Best county exhibition of horses, Clay County Agricultural Society.
" county agricultural display, " "

Class 14.—Speed.

Lot 1.—*Trotting Stallions.*—*Purse*, $150.

First money, b. s., Matt Patrick.
Second money, b. s., Alarm.
Third horse, b. s., Col. LaRue (distanced).

Lot 2.—2:40 *Trotting.—Purse*, $200.

First money, b. g., Hank Dubois.
Second " b. g., Broncho Jim.
Third " b. g., Buckeye.

Lot 3.—3:00 *Trotting.—Purse*, $100.

First money, br. g., Duster.
Second " br. g., Brown Tim.
Third horse, b. m., Mollie Todd (distanced).
Fourth " b. g., U. P. (distanced).

Lot 4.—2:30 *Trotting.—Purse*, $250.

First money, b. g., Charlie Douglass.
Second " g. g., Granger.
Third " blue m., Lucella, *alias* Lady Mack.

Lot 5.—2:50 *Trotting.—Go-as-you-please.—Purse*, $150.

First money, b. g., Hank Dubois.
Second " cr. g., Yellow Jacket.
Third " br. g., Brown Tim.

Lot 6.—*Running.—Purse*. $250.

First money, ch. m., Mollie Carter.
Second " ch. m., Resumption.

Lot 7.—*Trotting.—Free to all.—Purse*, $400.

First money, b. g., Charley Douglass.
Second " b. g., Broncho Jim.
Third " g. g., Granger.

Class 15.—Marble Work.

Best marble monument, A. & A. H. Brown, Lincoln.
" carved marble, " "
" lettering on marble, " "
" white marble monument, C. B. Parker, Lincoln.
" collection of marble, " "

Class 16.—Discretionary.

Best collection autographs, Perry & Baum.
" amateur press, Collier & Imhoff.
" lightning rod, Adams & Nelson.
" apple tree with roots, H. Culbertson.
" mammoth millet seed, "
" sample millet, "
" croquet tent and settee, Mrs. C. Jessup.
" double oven oil stove, "
" Brilliant oil stove, "
" gasoline stove, "
" sample and collection of grasses, John Neal.
" Fernery, Mrs. C. Jessup.
" dress cutting machine, Mrs. F. Barrett.
" burial casket, Hardy & Hartley.
" fancy fret sawing, F. A. Hartley.
" barbed wire fence machine, J. L. Elmwood & Co.
" tent and camping outfit, *Nebraska Farmer*.
" case horse shoes, C. E. Gould.
" swinging hammock, I. P. Traverse & Co.

PROGRESS OF

For the following very valuable table the Board is indebted close attention to these matters. While true, it represents only

Secretary of the Nebraska State Board of Agriculture:

DEAR SIR — In response to your request, I copy the following from my to the city, at the close of the year 1869, as also a change in business pursuits changed its character.

YEAR	FROSTS.				SHOWS GREEN IN SPRING.			PRAIRIE GRASS TO SUPPORT STOCK.	IN BLOOM.						
	Last in Spring.	Last Killing Frost.	First in Fall.	First Killing Frost.	Willows.	Gooseberries.	Prairie Grass.		Apple.	Peach.	Wild Strawberry.	Lilac.	Wild Plum.	Wild Cherry.	
1857	Jun17	M'y14	Oct 2	Oct 15	.....	.....	Apr30	M'y20	.....	.....	.....	.....	Apr28	.....	1
1858	M'y20	M'y20	Au 28	Oct 26	Apr 4	M'y20	Apr10	M'y 6	.....	.....	.....	.....	Apr16	.....	2
1859	M'y27	Apr23	Au 20	Sep 28	.....	Apr24	Apr23	M'y15	.....	.....	.....	.....	M'y 1	.....	3
1860	M'y16	Apr27	Au 31	Sep 20	M'h31	.....	M'h16	Apr15	.....	.....	.....	.....	Apr 7	.....	4
1861	M'y15	Apr27	Sep 21	Sep 27	Apr14	Apr26	Apr 4	Apr22	.....	.....	.....	.....	Apr26	.....	5
1862	Jun19	Apr 5	Sep 12	Sep 24	M'y 6	Apr 7	Apr29	M'y 6	.....	.....	.....	.....	M'y 9	.....	6
1863	Jun 3	M'y18	Au 25	Au 25	M'y11	Apr10	Apr 3	Apr26	.....	.....	.....	.....	Apr18	.....	7
1864	Jun12	M'y11	Sep 18	Sep 18	M'y27	.....	Apr18	M'y 8	M'y16	.....	.....	.....	M'y 3	.....	8
1865	M'y11	M'y11	Oct 15	Oct 27	M'y30	Apr15	Apr16	M'y 1	M'y12	.....	.....	.....	Apr30	M'y15	9
1866	M'y29	M'y20	Au 24	Sep 21	Apr21	Apr17	Apr10	Apr15	M'y17	.....	.....	.....	Apr27	M'y11	10
1867	M'y29	M'y26	Sep 6	Oct 12	Apr 8	Apr27	Apr25	M'y10	M'y11	.....	.....	.....	M'y10	M'y22	11
1868	M'y12	Apr20	Sep 3	Sep 17	M'y 2	M'h30	M'h25	Apr26	M'y18	.....	.....	.....	M'y 1	M'y12	12
1869	Jun 4	M'y17	Sep 16	Sep 27	Apr20	Apr21	Apr12	Apr24	M'y 5	.....	.....	.....	Apr30	M'y15	13
1870	M'y20	Apr17	Sep 11	Oct 18	.....	.....	.....	.....	M'y 6	.....	.....	.....	.....	.....	14
1871	M'y28	Apr27	Sep 26	Oct 4	.....	.....	.....	.....	M'y 1	.....	.....	.....	.....	.....	15
1872	Jun 2	Apr 1	Sep 10	Oct 10	.....	.....	.....	.....	M'y26	.....	.....	.....	.....	.....	16
1873	M'y 1	Apr24	Sep 29	Oct 6	.....	.....	.....	.....	M'y28	.....	.....	.....	.....	.....	17
1874	Jun12	M'y 4	Sep 15	Oct 12	Apr18	Apr15	Apr22	.....	M'y 8	M'y 8	M'y15	M'y11	M'y 6	.....	18
1875	Jun 7	M'y 3	Sep 20	Oct 11	Apr21	Apr18	Apr10	.....	M'y11	M'y11	M'y15	M'y14	M'y 7	.....	19
1876	Jun18	M'y 8	Sep 29	Sep 30	Apr18	Apr21	Apr22	.....	Apr30	Apr26	Apr27	M'y 6	Apr29	.....	20
1877	Apr30	Apr27	Sep 17	Oct 4	Apr10	Apr 8	Apr10	.....	Apr30	Apr23	M'y 9	M'y12	Apr28	.....	21
1878	M'y12	Apr12	Sep 10	Oct 18	Apr 3	M'h20	Apr13	.....	Apr10	Apr21	Apr13	M'y10	Apr 8	.....	22
1879	M'y 6	M'y 6	Sep 20	Oct 20	Apr12	Apr20	Apr19	.....	Apr23	Apr21	Apr26	M'y 8	M'y10	.....	23

SEASONS.

to Dr. A. L. Childs, Plattsmouth, who has for many years given a single locality, it is a fair general index.

PLATTSMOUTH, NEB., Dec. 19, 1879.

record of the "Progress of Seasons." A change of residence, from the country and habits, largely interrupted my record, and when it was resumed, in 1874,

	Ripe Fruit in Fall.		First Appearance of Birds in Spring.											
	Wild Plum.	Wild Cherry.	Robin.	House Wren.	Bobolink	Swallow.	Cat Bird.	Blue Bird	Sparrow.	House Martin.	Whip-poorwill.	King Bird.	Summer Yellow Bird.
... 1	Au 27	Jul 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.. 2	Au 20	.....	Mar 22	Apr 27	.....	May 2	.....	.....	.....	.....	.....	.....	.....
... 3	Au 21	Jul 9	Apr 11	Apr 25	.....	May 5	.....	.....	.....	.....	.....	.....	.....
... 4	Au 10	.....	Mar 4	May 24	May 10	May 12	.....	.....	.....	.....	.....	.....	.....
... 5	Au 13	Jul 10	Apr 3	Apr 22	May 8	May 11	.....	.....	.....	.....	.....	.....	.....
... 6	Au 27	Jul 15	Mar 5	.....	May 8	May 10	May 4	.....	.....	.....	.....	.....	.....
... 7	Au 20	.....	Mar 20	May 4	May 12	May 9	May 7	.....	.....	.....	.....	.....	.....
... 8	Sep 5	.....	Apr 1	Apr 30	May 7	Apr 30	May 3	.....	.....	.....	.....	.....	.....
... 9	Sep 1	Jul 8	Apr 10	May 3	May 3	May 9	May 1	.....	.....	.....	.....	.....	.....
...10	Au 25	Jul 6	Apr 13	Apr 30	May 2	May 4	May 4	.....	.....	.....	.....	.....	.....
...11	Sep 4	Jul 8	Apr 20	May 7	May 8	May 10	Apr 28	.....	.....	.....	.....	.....	.....
...12	Au 25	Jul 3	Mar 23	May 1	May 11	May 10	May 11	.....	.....	.....	.....	.....	.....
...13	Au 20	Jul 20	Mar 28	Apr 29	May 1	May 8	May 1	.....	.....	.....	.....	.....	.....
...14	.....	.....	Mar 7	Apr 27	May 13	May 28	Mar 28	.....	.....	.....	.....	.....	.....
...15	.....	.....	.....	Apr 30	May 1	May 3	May 5	.....	.....	.....	.....	.....	.....
...16	.....	.....	.....	May 3	May 11	May 25	Apr 29	.....	.....	.....	.....	.....	.....
...17	.....	.....	.....	May 6	May 14	May 18	May 8	.....	.....	.....	.....	.....	.....
...18	.....	.....	Mar 4	May 1	.....	May 5	May 8	M'h29	Apr10	Apr26	Apr30	M'y 1	M'y19
...19	.....	.....	Mar 13	Apr 17	.....	May 1	Apr 30	M'h13	M'y17	M'y 8	M'y 6	M'y 7	Apr21
...20	.....	.....	Feb 17	Apr 22	.....	Apr 27	May 4	Feb17	Feb17	M'y 1	M'y 3	M'y 8	M'y20
...21	.....	.....	Feb 3	Apr 20	.....	May 9	Apr 20	Feb 3	Feb 3	Apr28	Apr20	M'y 7	M'y25
...22	.....	.....	Mar 1	Apr 18	.....	May 4	May 1	Feb15	Feb23	Apr10	Apr18	M'y 2	Apr30
...23	.....	.....	Feb 4	Apr 14	.....	Apr 29	Apr 22	Jan24	M'h12	Apr15	Apr25	M'y 6	.....

MAXIMUM, MINIMUM, AND MEAN TEMPERATURE AND TOTAL RAINFALL OF MONTHS AND YEARS IN CASS COUNTY, NEBRASKA.

Year.	December (1860).				January (1861).				February.				March.				April.				May.			
	M'x	M'n	Mean.	R'n In.	M'x	M'n	Mean.	R'n In.	M'x	M'n	Mean.	R'n In.	M'x	M'n	Mean.	R'n In	M'x	M'n	Mean.	R'n In	M'x	M'n	Mean.	R'n In
1861...	.....	.....	22.60	1.00	.....	.....	18.10	.....	.....	.....	23.00	.....	.....	.....	42.30	.....	.....	.....	47.20	.....	.....	.....	59.00	.....
1866...	.....	.....	19.50	1.00	.....	.....	16.60	1.35	68	—32	22.75	5.60	71	— 1	29.44	2.30	93	12	51 61	3.19	92	30	60.20	2.85
1867...	57	— 1	23.31	1.60	37	—10	14.49	1.84	52	—10	29.90	2.70	45	—20	16.91	2.12	73	22	45.65	2.80	85	27	55.27	8.25
1868...	68	2	27.65	.85	52	—26	11.09	.85	66	—22	24.00	1.15	92	4	43.85	2.75	91	9	45.54	3.60	89	32	65.02	2.80
1869 ..	45	—30	19.35	2.10	49	— 2	23.38	1.30	63	—10	27.59	2.45	70	— 5	32.55	.60	80	15	50.16	2.45	92	29	60.59	6 15
1870...	.....	.....	28.84	2.20	.....	.....	24.38	I.40	.....	.....	32.32	1.00	.....	.....	32.57	1.00	.....	.....	54.56	2 70	.....	.....	67.05	5.80
1871...	.....	.....	28.05	1.00	.....	.....	25.02	.65	.....	.....	31.50	1.60	.....	.....	42.80	.40	.....	.....	59 60	1.80	.....	.....	66.80	2.40
1872...	.....	.....	20.04	.75	.....	.....	18.90	.30	.....	.....	29.30	.10	.....	.....	32.70	1.40	.....	.....	47.70	2.40	.....	.....	57 10	4.40
1873...	56	—20	16.80	2.10	47	—22	13.13	1.80	58	—10	23.90	.40	74	— 4	36 37	.70	78	26	45.22	15 90	89	41	59.11	19.00
1874...	49	— 7	22.53	1.60	46	—14	19.92	.45	46	— 6	20.09	1 55	60	7	32.15	2.51	88	12	44.65	4.09	92	38	67.48	3.15
1875...	58	—10	25.58	.80	40	—21	7.71	.38	42	—21	11.56	.90	72	— 3	29.11	3.38	84	20	44.81	4.62	96	25	71.00	3.98
1876...	69	— 8	32.18	1.10	56	— 2	27 00	.06	68	—12	28.25	.94	60	— 4	27.92	2.09	83	30	51.12	5.16	88	35	63.73	3.10
1877...	59	—11	16.85	.07	58	—20	17.54	1.32	62	10	34.96	.42	75	0	32.46	1.01	79	22	49.27	5.88	84	35	59.06	7.57
1878...	60	2	37.07	1.73	51	— 2	27.20	1.69	62	5	34.76	.15	81	19	46.74	3.09	83	31	53.95	4.01	81	32	57.49	5.54
1879..	56	—11	19.50	.65	60	—24	19.27	.12	60	—10	26.05	1.12	85	1	40.78	2.15	80	12	52.32	2.17	91	34	65.84	5.94

CONTINUATION OF THE ABOVE.

Y'r.	June.				July.				August.				September.				October.				November.				Year.			
	M'x	M'n	Me'n	R'N IN.	M'x	M'n	Me'n	R'N IN.	M'x	M'n	Me'n	R'N IN.	M'x	M'n	Me'n	R'N IN.	M'x	M'n	Me'n	R'N IN.	M'x	M'n	Me'n	R'N IN.	M'x	M'n	Mean.	R'nIn.
1861	.....	.....	71.60	.....	.....	.....	78.30	.....	104	40	74.31	7.40	92	30	62.93	8.20	84	20	49.63	2.60	.....	.....	.....	.....	.....	.....	.....	.....
1866	95	38	68.01	5.93	100	46	77.80	2.80	101	34	72.32	3.22	85	26	57.32	5.65	86	14	53.08	00	74	6	38 75	1.65	101	—32	47.53	31.70
1867	92	42	72.33	3.15	96	43	75 32	4.70	97	45	75.05	1.70	95	32	66.58	1.55	87	22	52.24	1.05	78	—7	39.90	.05	97	—20	46.67	31.51
1868	94	45	72.03	5.00	106	50	83.68	3.00	90	50	69 50	6.30	86	25	57.33	2.35	85	22	49.67	1.90	75	9	33.92	1.90	106	—26	48.84	37.85
1869	90	52	68.70	9.05	92	45	73.30	7.50	94	50	75.19	8.00	85	29	62.00	5.20	82	10	42.07	.75	.....	.....	35.26	1.40	94	—30	47.42	47.35
1870	.....	.....	74.20	2.10	.....	.....	82.10	2 00	.....	.....	69 90	3.66	.....	.....	66.30	6.60	.....	.....	53.60	2.30	.....	.....	42.09	.00	.....	.....	46.61	32.10
1871	.....	.....	76.60	2.30	.....	.....	76.40	14.10	.....	.....	74.60	3.30	.....	.....	62.20	1.30	.....	.....	53.69	1.20	.....	.....	34.00	3.20	.....	.....	46.82	32.25
1872	.....	.....	73.06	4.70	.....	.....	75.17	7.40	.....	.....	74.53	90	.....	.....	62.37	4.10	.....	.....	50.91	4.00	.....	.....	30.91	.70	.....	.....	45.69	31.35
1873	94	60	75.08	4.80	96	59	75.54	6 40	105	49	77 98	1.00	95	28	61.27	2.20	89	15	48.16	1.60	75	8	36.95	.45	105	—22	47.58	49.45
1874	94	44	74.31	18.02	113	55	82.35	1.00	111	53	78.71	1.40	95	34	64.33	11.13	79	18	54 14	2.11	76	7	34.81	1.80	113	—14	49.81	49.71
1875	95	43	71.20	13.58	97	57	74.13	6.72	86	51	69.68	8 40	90	34	56.00	5.65	79	21	48.86	1.32	72	—8	30.68	01	97	—21	45.09	46.72
1876	94	44	68.63	4.58	95	54	75.71	7.44	92	51	74.18	8.39	86	31	61.36	7.03	77	19	48.87	.71	69	0	31.26	2.14	95	—12	49.20	42.74
1877	90	40	67.65	6.41	94	48	73.34	2.20	94	52	71.75	4.56	86	40	65.44	2.37	77	27	49.68	7.11	61	—3	33.96	1.70	94	—20	47.77	40.62
1868	86	44	66.39	9.64	94	55	76.91	11 6.	95	52	75.27	1.23	88	34	63.02	3 36	84	11	51.06	.71	69	13	41.85	.71	95	— 2	52.64	43.47
1879	90	41	70.51	5.05	94	56	75.84	3.10	94	50	73.71	2.16	91	31	61.65	2.12	87	19	59.54	1.99	68	7	37.90	5.36	94	—24	50.41	31.93

epochs of dryness like the one, or similar to the one, through which we have just passed, followed again by periods of moisture. These periods lasted for many tens of thousands of years. It is not impossible that we are entering on another moist period, the length of which, especially when aided by the causes that man sets in operation, will be beyond all calculation.

Observation, experiment, and the highest scientific authority demonstrate that climates in the west are becoming moister; that rainfall is increasing steadily. This increase must extend until the plains east of Denver and Laramie receive sufficient rainfall to produce farm products without irrigation.

For these reasons we are compelled to say that any evidence of present dryness, where dryness exists, is evidence only for the present, and should not be used to cover these areas with the undeserved reproach or the curse of desert lands.

It follows also that the evidence of any number of ignorant persons, whether merchants or herders, is wholly incompetent on this question, and should have had no weight before a congressional committee.

The alienation therefore of 500,000,000 to 800,000,000 acres of these vast fertile areas that are surely changing their dry character to answer the farmer's varied uses and demands—and by law maintaining them as vast pastures or commons, when they could in the near future be fruitful farms—this would be a fearful robbery, and those who are conspirators in the attempt should receive public execration.

This policy which is now proposed, and which would stop the operations of the present land laws, which have been perfected by three-fourths of a century of agitation and legislation, would be in the interest of the few against the many—in the interest of capital against the toiling millions. The success of this project would be a crime against society and calamitous to us as a state.

Respectfully submitted,

SAMUEL AUGHEY,
C. D. WILBER.

ESSAY ON WOOL-GROWING IN NEBRASKA—SHEEP—THEIR NATURAL HISTORY.

BY MOSES STOCKING.

According to Cuvier the sheep belongs to the class Mammalia, the Order Ruminantia, the Genus Ovis, and the species Ovis Aries, and covered with wool in the place of hair. It has eight incisors in the lower jaw, but none in the upper, which is armed with a hard, thick pad instead. The molar teeth are twenty-four in number, twelve in the upper and twelve in the lower jaw, the joint of which is adapted to a grinding motion. It has no canine teeth; consequently a strictly herbivorous animal. It has four stomachs, and these, with the esophagus, so constructed as to return the food for the purpose of rumination; the intestines long, but not collated.

Spooner says: "The body of the sheep resembles in most respects that of the ox; with a somewhat less degree of nervous energy, it possesses a greater capability of enduring the extremes of cold and heat, and still stronger digestive organs. The skeleton of the sheep contains nearly two hundred bones, which give form to and constitute the animal frame.

The organs of mastication, or mouth, of the sheep and its contents are admirably adapted for their natural functions. The sheep is intended by nature to thrive on scanty pasture, and to bite much closer to the ground than the ox; the lips are therefore protected by hair, which defends them from injury from the ground. They approach somewhat to a point, and the upper lip is slightly cleft, which suits it well for the purpose. The lips greatly assist in gathering together the food, and are largely furnished with the nerves of feeling; they possess the powers of motion and feeling in a high degree.

The mouth is abundantly supplied with a watery fluid called sa-

liva, particularly during mastication, when it is secreted and poured in in considerable quantities. This fluid is principally secreted by three pairs of glands, the largest of which are the parotid, situated at the root of each ear; the sub-maxillary glands, situated under the jaws; and the sublingual, situated under the tongue. Besides these there are other small glands connected with the cheek and the bottom of the mouth; and one peculiar to the sheep, situated behind the lower jaw. There is thus from these various sources an abundant supply of saliva, more copious than most animals possess, and which is rendered necessary by the hard and woody nature of the food consumed in a natural state. And it has been found that a large supply passes into the stomach independent of mastication, and is there required for softening and macerating the dry food; for when deprived of this supply by an experiment, the contents of the paunch remained dry.

THE ORGANS OF DIGESTION IN SHEEP,

like those of graminivorous animals in general, are extensive and complicated, having a far more difficult and elaborate office to perform than those of carnivorous animals. The food taken is in a more crude or less prepared state; the nutritious portions bear a much smaller proportion to the whole mass, and accordingly the food taken is of considerable bulk. To meet these requirements the digestive organs are much more spacious and more complicated than those of the carnivora; means are afforded for detaining the food until the nutriment can be properly extracted; a larger amount of chemical and vital force is employed, and a more abundant supply of nervous energy afforded.

HABITAT OR STATION.

The natural home of the Ovis Aries is in the temperate zone, but the great hardiness and elasticity of constitution possessed by this species enables them to endure much greater degrees of cold and heat and adapt themselves to great vicissitudes of climate. In

fact they are found to range from Iceland in the far north to the farthest bounds of civilization in the south. Wherever civilized man has found a home, there also has the sheep followed and administered to his wants.

GENERAL CHARACTERISTICS.

The Ovis Aries delights in a country of hills and rocks; a dry climate, running water; short, scanty, but sweet or resinous herbage. They delight to climb and leap, to feed and frolic, being careful to avoid all wettings of foot or fleece. Naturally indifferent to the ordinary degrees of cold of the temperate zone, they will readily leave the rank grazing of the deep, warm valley for the scanty herbage of the mountain top. No grazing place pleases them like the short, sweet herbage of a dry rocky ridge—an open lookout where they can watch the approach of a foe; and where an occasional tree offers grateful protection and cooling shade from the burning heat of a noonday sun. Being highly gregarious in their habits and instincts, they readily congregate in flocks for sociability and mutual protection against enemies.

EARLY DOMESTICATION.

Unquestionably the Aries was one of the first conquests of man from the animal kingdom; its great timidity, inclining it to seek a protector, highly favoring domestication. On the other hand, so soon as man became acquainted with its great value as a domestic animal, capable of supplying him with both food and clothing, would he seek to become possessed of large numbers as a reserve against famine and cold, and a source of wealth to be used in traffic with his fellow man.

FIRST HISTORICAL FLOCKS.

The following historical facts afford some evidence of the high esteem in which sheep were held, of the immense wealth invested

in their flocks, and of the vast extent to which sheep-husbandry was prosecuted by the early Asiatic nations:

We read that the plains of Shinar were not sufficient to subsist the flocks and herds of Abram and Lot. Job possessed 14,000 sheep, besides camels and oxen. The Israelites robbed Midian of 675,000 in one raid into their country. The Hagarites yielded them a spoil of 250,000. The King of Moab paid them a yearly tribute of 200,000, and Solomon offered 120,000 at the dedication of the temple.

VALUE AND NECESSITY FOR SHEEP.

The great value of sheep as a domestic animal becomes apparent when we consider the constitution and surroundings of man—a naked and hungry animal—compelled to be clothed and fed that he may continue to exist for a brief period.

For the purposes of clothing the wool of the sheep constitutes the cheapest product—the most easily supplied, the best adapted to his health, and filling most completely the various needs of his wardrobe of anything which, with all his powers of mind, he has been able to discover in either the animal or vegetable kingdom.

As an article of food for man, the flesh of the sheep is more healthful than that of any other domestic animal, and might always be and frequently is the cheapest.

THE SOURCES OF PROFIT

in sheep husbandry are, first, the natural increase of the flock; second, the annual clip of wool; third, amount and value of the flesh for food; fourth, value of the pelt for clothing, leather, and other purposes; fifth, the amount and value of the manure made annually; sixth, clearing the land of bushes, briars, and noxious plants.

REQUIREMENTS FOR SUCCESSFUL AND PROFITABLE SHEEP HUSBANDRY.

We have seen that the anatomy of the sheep favors sprightliness and action, enabling them to climb, leap, and perform long jour-

neys; that they are at home on an arid soil and in a dry, temperate climate; that they seek for food the harsh, dry, scanty herbage of hillsides and rocky places; that their masticating and digestive organs readily enable them to convert such food into healthy flesh and warming wool for the use of man; that their natural constitutions are strong and hardy, possessed of great flexibility, enabling them to endure the vicissitudes of climate and conform to a wide range of latitude.

Consequently a country, whether level, rolling, or hilly, to be adapted to sheep husbandry must possess a tolerably dry soil, a dryish climate, which is bracing and healthy; pure water, and a variety of herbage adapted to the wants of the animal, which includes a wide range of plants. Another requirement is a near market for mutton and wool, for pelts and surplus sheep. For the manure made a ready market is always at hand for the purpose of renovating the farm.

The building of towns, the erection of manufacturing establishments, and the increase of population largely increase the demand for mutton and wool and add to their market value. Manufactories, by cheapening the productions of cloths, enable the people to clothe themselves at less cost, and this saving will by many be expended in the use of a more generous diet, and this will in turn increase the demand for flesh—that is, for mutton.

BREEDS OF SHEEP.

The only breeds of sheep worthy of note in this connection are the Merino, Cotswold, and Downs. All others are either so closely allied to these, or so expensive to procure, or so utterly worthless, as not to merit notice.

THE MERINO.

"From a period anterior to the Christian era (says Randall) fine wooled sheep abounded in Spain, and they were, or gradually ripened into, a breed distinct in its characteristics from all other breeds in the world. It was, however, divided into provincial va-

rieties which exhibited considerable differences; and these were subdivided into great permanent cabanas or flocks. The first division recognized in Spain was into Transhumantes or travelling flocks, and Estantes or stationary flocks. The first were regarded as the most valuable; they were pastured in winter on the plains of southern Spain, and driven in spring (commencing the journey in April) to the fresh green herbage of the mountains in northern Spain. They began their return early in October. The route each way averaged about four hundred miles, and was completed in six weeks. Through enclosed regions and where the feed was scarce they often travelled from fifteen to twenty miles a day. The lambs were dropped early in January.

"Thus every year of its life the migratory merino performed a journey of eight hundred miles, and passed nearly a fourth of its time on the road. It received neither shelter nor artificial food. Such a training constantly weeded out of the flock the old, the feeble, and the weak in constitution, and developed among those which remained capabilities for enduring exertion and hardship to an extraordinary degree."

From such source and such stock as above described, imported into the United States by Chancellor Livingston, Consul Jarvis, General Humphreys, and others, have the justly celebrated

AMERICAN MERINOS

descended. Their great superiority in size and form of carcass and in weight of fleece over their Spanish progenitors is justly due to the scientific knowledge and practical skill of American breeders.

Livingston gives the weight of unwashed Spanish fleeces at eight and a half pounds in the ram and five pounds in the ewe. Unwashed fleeces from American merinos now reach and sometimes exceed thirty pounds in the ram and twenty pounds in the ewe. The improvement in form has also been very great, while the advance in weight of carcass amounts to some 20 or 30 per

cent; at the same time they have lost nothing in hardiness of constitution.

Perhaps there is no sheep in the world—certainly not in the United States—which are in every respect so well adapted to the wants of the Nebraska farmer as these same American merinos. No sheep in our country are more hardy, endure rough usage, privations, and short keep as well; none others shear as much wool in proportion to live weight, or herd as well, or keep as healthy when run together in large flocks. In the language of Dr. Randall, "They are emphatically the negligent farmer's sheep," the poor man's sheep, and the frontierman's sheep.

But a small portion of the state is as yet brought under cultivation; the farms even in the oldest portions have but few inclosures for the retention of stock, or barns and sheds for their protection and comfort.

The tame grasses are not as yet cultivated to an extent which will warrant the taking of them into the account when considering a food supply. In the eastern, which is the settled portion of the state, the wild or native grasses furnish grazing only during six months of the year; for the other six months hay or other food must be provided. The market for mutton is either limited or quite distant. The main sources of profit at present and for several years to come must be natural increase of numbers, wool production, and manure to enrich the soil and prepare it for the growth of the tame grasses.

COTSWOLDS.

The following is Spooner's description of the Cotswold, as quoted by Randall.

"The Cotswold is a large breed of sheep, with a long and abundant fleece, and the ewes are very prolific and good nurses. They have been extensively crossed with the Leicester sheep, by which their size and fleece have been somewhat diminished, but their carcasses considerably improve, and their maturity rendered earlier. The superior hardihood of the improved Cotswold over the

Leicester, and their adaptation to common treatment, together with the prolific nature of the ewes and their abundance of milk, have rendered them rivals of the New Leicesters. The quality of the mutton is considered superior to that of the Leicesters, the tallow being less abundant, with a larger development of muscle."

There is now little doubt that the Cotswold has become, under favorable conditions of climate, food supply, and market facilities, the most valuable wool and mutton producing sheep in the world.

As a mutton producing sheep, its great size, early maturity and propensity to fatten, place it at the head of the list; while the long, smooth and glossy fiber of its wool admirably adapts it to the manufacture of a wide range of goods, which the present fashions demand.

Randall says: "The English improved mutton sheep in its present perfect development of all the points which constitute the matchless meat producing animal, is in some part a product of the temperate, uniform, and moist climate of England.

"It has withstood the effects of acclimation in the United States successfully, but it requires more care and shelter, and is not so well adapted to our habitual extremes of heat and cold as the hardier Merino. Exposed without adequate shelter to rapid and excessive variations of temperature, it is subject to colds, which tend to various diseases, both of inflammatory and typhoid types: and at best it wilts and withers away."

They are not adapted to the situation and present wants of the Nebraska farmer for other reasons. First, they do not herd well, that is they cannot be kept in large flocks without danger of contracting disease; Second, their open loose fleeces readily admit the passage of water to the skin, which chills and injures them; Third, the long fiber of the fleece is very liable to catch and waste upon the rough herbage of our prairies; Fourth, they are enormous feeders, which in the eastern portion of our State makes the wintering of them expensive; Fifth, the distance to a mutton market detracts largely from the profits of producing the same; Sixth, our farmers have not the shelters which they require, nor a supply of green succulent food, an indispensable article in the production of English tasting mutton.

The foregoing reasons apply with a somewhat varying force to their cousins, the New Leicester and Lincoln breeds.

That the above named sheep are valuable, and under suitable conditions of climate, shelter, food supply, enclosures, and market for wool and mutton, highly profitable is readily conceded, that the ewe coupled with the Merino Ram, makes an excellent cross is also conceded ; but that they are not adapted to the present wants of the Nebraska farmer is sufficiently evident from the foregoing.

"DOWNS."

We quote from Randall's " Practical Shepherd."

"The South Downs of the present day present probably as marked an improvement upon the original breed as that exhibited by the Leicesters or any other breed. To the late Mr. Ellman, of Glynde, they are indebted for the high estimation in which they are now generally held. When he commenced his experiments in breeding, he found the sheep of small size and far from possessing good points ; being long and thin in the neck ; narrow in the fore quarters ; high on the shoulders ; low behind, yet high on the loins ; sharp on the back ; the ribs flat, drooping behind, with the tail set very low; good in the leg, though somewhat coarse in the bone.

By a careful and unremitting attention during a series of years to the defective points of the animal, and a judicious selection of his breeding flock, his progressive improvements were at length acknowledged far and wide, and he closed an useful and honorable career of some fifty years with the satisfactory conviction that he had obtained for his favorite breed, a reputation and character which would secure them a place as the first of short-wooled (British) sheep.

The South Down sheep of the present day are without horns, and with dark brown faces and legs ; the size and weight have been increased ; the fore quarters improved in width and depth; the back and loins have become broader and the ribs more curved, so as to form a straight and level back; the hind quarters are square and

full; the tail well set on, and the limbs shorter and finer in the bone.

"The sheep, though finer in form and symmetrical in appearance, are very hardy, keeping up their condition on moderate pastures and readily adapting themselves to the different districts and systems of farming in which they are now met with. They are very docile, and thrive well. "Their disposition to fatten enables them to be brought into the market at twelve and fifteen months old, when they average 80 lbs. weight each. "At two years they will weigh from 100 to 120 lbs. each. The meat is of fine quality. The ewes are very prolific, and are excellent mothers, commonly rearing 120 to 130 lambs to the 100 ewes. The fleece, which closely covers the body, produces the most valuable of our (British) native wools. It is short, and the staple fine and curling, with spiral ends, and is used for carding purposes generally."

The following is the testimony of Samual Thorne, Esq., of Thorndale, N. Y. "My flock of South Downs consist of something over 200 head. They are descended from fourteen different importations, principally from the flock of the late Jonas Webb.

"The breeding ewes usually lamb in March. The rate of increase for the past six years has been 142 per cent. The lambs are weaned at four months old. The ewes and wether lambs are kept on good short pasture; the ram lambs are folded on rape and kept there until all stock is housed. When put in winter quarters, the wethers have hay and roots; the others have in addition, a little grain. The next season the yearling wethers are given good pasturage, and as soon as the slightest frost makes its appearance, a half pint of corn in addition to each. When put in the shed they are given turnips and the corn in increased to a pint each. They are marketed at Christmas, and usually dress from 75 to 100 lbs.

"With regard to the wool producing qualities of the South Down, the one year that I kept an accurate account, the ewe flock gave 6 lbs. 5½ oz.; the yearling ewes 8 lbs. 12 oz.; the yearling rams 8 to 12 lbs. This was unwashed wool."

Mr. Thorne further writes: "Breeding ewes require exercise." An important fact, to be remembered.

COST OF MANUFACTURING.

ADAPTATION OF NEBRASKA TO WOOL-GROWING.

The natural adaptation of Nebraska to sheep husbandry, consists in the general mildness of the climate, the dryness, purity and general healthfulness of the atmosphere; the great depth, fertility and porousness of both soil and subsoil; from which cause water is seldom found standing upon the ground, or its surface wet even, for more than an hour or two after a shower; the abundance and great variety of the rich oily and resinous plants, so highly relished by and which are so admirably adapted to the wants of all wool-bearing animals; and the purity and abundance of the spring and running water, whether for the slaking of thirst or propelling of machinery.

THE AREA OF NEBRASKA

includes in round numbers 76,000 square miles; nearly all of which is adapted for sheep-walks.

The proportion of wet swampy or spongy lands is very small. All uplands and nearly all bottom lands along the streams are, from the porous character of the soil and subsoil, which forms a system of under drainage unparalleled in other portions of the world, rendered sufficiently dry for the purpose.

And these lands, whether bottom or upland, being everywhere covered with a variety of nutritious vegetation, suited to the wants of the animal, constitute a sheep-walk nearly co-extensive with the area of the State.

WATER SUPPLY.

For all purposes of watering stock, the supply of running spring and clear pool water is quite ample. Where there is a deficit, wells can be sunk and abundance of good water obtained at small cost.

MUCH NATURAL SHELTER

is found among the hills and ravines, and among the timber belts and brush thickets which skirt the streams. In addition to

these natural retreats, a very cheap shelter can be constructed from forks and poles for the frame work, and grass or straw for roofing. Slough-grass makes an excellent and durable thatch. In one instance in Cass County, it has done good service for eighteen years.

THE VEGETATION OF NEBRASKA

includes a great variety of species, the most of which possess either saccharine, resinous, or medicinal qualities, adapting them to the wants of sheep, and which they will eat with avidity.

Too close feeding will exterminate the more tender variety of plants, but their place is soon supplied by others, thus continuing a food supply. The hardy Bunch, Gramma and Buffalo Grasses, bear grazing and tramping wonderfully.

The manufacturing advantages of Nebraska are comprised in her numerous and cheap water-powers, which abound upon all her numerous streams, aggregating many thousands of horse-powers, the numerous beautiful sites for towns adjacent thereto, the healthy character of her climate, the natural facilities for constructing lines of communication between different portions of the State and with the outside world; the great variety, abundance, fine quality and cheapness of all articles of food for human consumption; the abundance and cheapness of her raw products, enabling the manufacturer to place his goods upon the market at small cost; the certainty of a market for his wares, arising from the wants of our present and rapidly increasing population and the great advantage which always arises from the close proximity of producer and consumer, thereby saving cost of transportation upon the raw product, and upon the manufactured article.

THE NATURAL INCREASE OF SHEEP,

varies greatly with the breed kept. Merino ewes well kept will produce annually, about 105 per cent, and raise 90 per cent; but as usually kept they do not raise over 75 per cent of the number born. When in good condition the Merino ewe is sure to breed, but seldom produces twins.

Ewes of the Cotswold and Leicester breeds have the reputation of being good breeders, frequently bearing twins, and good nurses. They are also claimed by some writers as very hardy.

But if such are facts, why are they not more abundant in the country? They have been a long time before the public. The ewes are seldom butchered for mutton, and are even held at high prices as breeders; the wool is always in demand, and commands the top of the market in price. There is a mystery, a strange inconsistency somewhere.

THE SOUTH DOWN

ewe is exceedingly prolific, frequently bearing twins and occasionly triplets, the rate of increase under first class care, as is shown upon the testimony of Samuel Thorn, Esq., reaching 142 per cent.

In California the common coarse ewe is highly prolific, cases are recorded of five lambs from one ewe in the space of twelve months. Twins are common, almost the rule. The old fashioned native sheep of fifty years ago, was a most prolific breeder, in fact, valuable for little else. The ewe was a frequent bearer of twins, an excellent nurse, and under good treatment would raise 120 per cent of lambs.

THE VALUE OF THE ANNUAL WOOL CLIP

also varies greatly with the breed and market value of wool. American Merinos, as now improved, shear from one fourth to one eighth of their live weight of unwashed wool, even when kept in large flocks. In Nebraska, seven and one half pounds of brook-washed wool has been cut from a yearling ewe, whose live weight was only forty-five pounds; and fifteen pounds of unwashed wool from a ewe of similar age. In the older states, high-bred yearlings frequently shear twenty pounds of unwashed wool.

The live weight of Merinos, range from seventy to one hundred

pounds in the ewe, and from eighty to one hundred and sixty pounds in the ram.

All long-wooled breeds are much larger and heavier.

THE WELL-FED COTSWOLD

frequently attains a weight of three hundred pounds, and sometimes shears twenty pounds; but from six to twelve pounds is the more frequent clip for good flocks. Although the clip in proportion to live weight is much less than with the Merino family, yet the higher price which it commands on the market at the present time makes up for that deficit.

THE DOWNS

hold an intermediate place, both in weight of carcass and character of fleece, between the fine and long-wooled breeds. Good flocks shear from five to ten pounds of medium stapled, rather dry, and slightly harsh wool, but adapted to a variety of manufactures. Prolificacy, hardiness, and mutton qualities are their strongest recommendations.

THE PRESENT MARKET VALUE

of their respective fleeces, unwashed, would rate about as follows, viz.: Merino fleece, $2.10; Cotswold and other combing fleeces $2.48; Down and similar fleeces, $1.75 each.

THE MUTTON VALUE

of the wethers at the present time would rate, for Merino, $4.50; Cotswold, $6.90; and for Downs, $5.40 each; or four and one-half cents a pound, live weight.

THE VALUE OF THE PELT

mainly depends upon the quantity of wool which it contains, ranging from twenty-five cents to as high as two dollars each.

Dressed with the wool on they become a valuable and useful article of clothing for man, impenetrable to winds and of great durability. Dressed as leather they fill many wants at little cost.

AS A MANURE PRODUCING ANIMAL

sheep have no superior. Spooner estimates the value of manure made at three-pence per week for each sheep. Randall says that it cannot be estimated at less than fifty cents per annum, and that he should be inclined to put it higher.

Mr. Richard Peters, of Georgia, says: "Sheep have so improved my pastures as to render them capable of sustaining ten times the number which they could twenty years ago." He has been in the business twenty-seven years, and tested a variety of breeds. He further says that the Spanish Merino and native have proved the most profitable with him. Also that their cross proves better than other crosses.

FOR CLEANING FIELDS

of briars, bushes, and troublesome weeds, sheep are proverbial. No other domestic animal excels them in this particular. They love variety in their food, and will consume with a relish hard and woody plants, and those with the sharpest spines—they are great browsers.

THE COST OF KEEPING SHEEP

varies greatly in different sections of the country, depending largely upon the character of the climate, the price of lands, rate of interest, taxes, price of labor, markets, etc.

In the State of New York the annual cost is set down by Randall and other eminent farmers at about $2.00 per head.

Mr. John McDowell, of Washington county, Pa., puts the cost at $1.54 per head.

In southwestern Georgia, Mr. David Ayers says, the cost is reduced to 14 cents per head; and in middle Georgia, Mr. Robert C. Humber says they cost nothing "except the salt they eat."

In Texas and California the annual cost is little beyond the cost of herding. The same is true to a great extent of western Nebraska, western Kansas, and the Territories. In eastern Nebraska the cost has ranged from 60 cents to $1.36 per head.

In the statement of Mr. Myers the cost is put at 98 cents. In his statement for the current year it is 99 cents. The cost of our own flock from July, 1872, to July, 1873, was 64 cents per head, and from July, 1873, to July, 1874, it reached $1.36 per head. This may be set down as the maximum cost in any portion of Nebraska.

THE PROFITS OF SHEEP HUSBANDRY.

depend mainly on the cost of keep and the market value of wool, mutton, and store-sheep.

In the older states the cost of keep usually absorbs the market value of the fleece—leaving the natural increase and the manure as profit. In some instances the cost absorbs both fleece and natural increase, leaving only the manure as profit; and even under such circumstances good farmers aver that it pays to keep sheep. Mr. McDowell, of Pennsylvania, says his sheep pay a net profit of 46 per cent on the capital invested. Mr. Ayers, of Georgia, puts his net profit at 90 per cent, and Mr. Humber, of the same State, says his pay 100 per cent. The average of the State is put down in the Geoogia Manual of Sheep-Husbandry at 63 per cent.

Frequent reports from Oregon, California, Nevada, Utah, New Mexico, Colorado, Wyoming, western Nebraska and western Kansas, put down the annual net profit from well managed flocks, at 100 per cent upon the invested capital.

The flock of Mr. Myers, heretofore mentioned, netted $1.812 per head. Our own flock, after deducting the unusual cost of $1.36 per head for keeping, paid a profit of $1.702 per head, or 56 per cent. In previous years the net profit has ranged from 70 to 75 per cent.

The Hon. Geo. Geddis, one of the most intelligent and successful of New York farmers, says in a late number of the *New York*

Tribune: "With about one sheep to the acre of cultivated land, pasture and meadows, we raise more bushels of grain on the average than we did when we had no sheep to manufacture our coarse forage into manure, and to enrich our pastures to prepare them for grain crops, and the land is constantly improving and the crops increasing in quantity, and we have the wool and mutton produced by our flocks in addition, producing our crops on less acres and at less cost than we did before we kept sheep.

"The raising of wool in the West aud Southwest must be conducted in a manner very unlike that of the East. Large flocks, some of them, perhaps, migratory, and having great range of pasturage, and very little winter housing or feeding of forage, supporting themselves with very little attention from the shepherds, as compared with the care taken in the East, where the winters are severe.

"The great trans-Mississippi plains offer a field for the production of fine wool equal in all respects to Australia or New Zealand and superior to South America, and when American energy and skill shall have once taken hold of the business of wool raising on these great plains, this nation will become one of the great sources of the world's supply of fine wool.

"The plain and unmistakable policy of the nation then, is to protect as it now does, the wool industry that is now in existence, and continue that protection until the business in all its branches is placed upon a basis so firm that we shall be independent of all the world in a matter so important as the clothing of the people."

The above lengthy extracts contain important suggestions for the consideration of Nebraska farmers and legislators; and they will do well also to consider the following facts:

Nebraska has two sections of excellent sheep lands capable of sustaining four thousand sheep, for one sheep; she has two persons for one sheep, and at least a dog and a half for each sheep. She has no law for the protection of sheep against the ravages of these numerous canines.

Protected sheep husbandry will pay present debts and improve the State more rapidly than any other agricultural industry.

The business is favorable to virtue and fosters morality. The shepherd has leisure to read, reflect, and cultivate the intellect. Being constantly associated with a creature so timid, confiding, and harmless as the sheep he must, perforce, abate something of his natural ferocity, improve in kindness, love and forbearance.

It is a business at which children and aged people can be useful. It will utilize the grasses of the State, which now go to waste. It will enrich the soil, improve the land, increase the crops, pay our debts, and leave money in the purse.

The following summary is taken from the Georgia Manual before referred to:

Of those who have tested crosses in Georgia, 98 per cent report the cross of the Merino and native most profitable.

The average annual cost of keeping sheep in Georgia is 54 cents per head.

The average cost of raising a pound of wool is 6 cents. The average price for which the unwashed wool is sold is $33\frac{1}{3}$ cents. The average net profit on a pound of wool is $27\frac{1}{3}$ cents.

An average of seventy-four lambs are raised for every one hundred ewes, notwithstanding the ravages of dogs.

The average yield of unwashed wool to the sheep is 3.44 pounds, being a net profit of 94 cents.

The average price of stock sheep is $2.50 per head. The average price of muttons is reported at $2.75.

Ninety per cent of the correspondents report *dogs* the principal obstacle to sheep husbandry.

Seventy-five per cent of the correspondents recommend the protection of sheep against the ravages of dogs by appropriate legislation.

Georgia has 99,415 dogs, and they destroyed between April 1st, 1874, and April 1st, 1875, 28,625 sheep. Fifteen per cent of the sheep in the State are annually killed by dogs. The State has thirty-one dogs for every one hundred sheep, and they destroy sheep to the value of $73,852 annually, or 9 per cent of the value of all the sheep in the State.

Correspondents say that one hundred sheep regularly folded, will fertilize so as to double the crops, eight acres a year.

FURTHER FACTS.

The population of the United States in 1870, according to the census tables, was 38,925,598, being an increase of 22¼ per cent upon the population of 1860.

The number of sheep returned was 28,074,582. being an increase for the same period of 21 per cent, showing that the populational increase was 1¼ per cent greater than that of sheep.

The wool product of 1870 is set down at 100,102,387 pounds, or 2.57 pounds to each person.

During the last decade there was a decrease of 892,446 in the number of neat cattle, or 3.17 per cent.

With a population increasing in the ratio of 22¼ per cent, and only 21 per cent increase in the number of sheep, and an actual decrease of 3.17 in the number of neat cattle, and with a total wool product of only 2.57 pounds to each person, where is the danger of suddenly glutting either the meat or wool markets?

The value of foreign wools and manufactures of wool imported and consumed in the United States, for the fiscal year ending June 30, 1873, amounted to $72,892,742.64; of this sum $20,466,165.55 was on account of raw wool. For the fiscal year ending June 30, 1874, the importation and consumption of foreign wool and woollens amounted to $59,287,931.65; of this sum $10,611,866.56 was on account of raw wool. The great reduction in the importation of raw wool was due to the scarcity and high price abroad—compelling our mills to run upon domestic wool. Not a bale of foreign was received in the foreign market during several weeks of the year.

If the legislators of Nebraska are wise, they will at once protect sheep against the ravages of dogs, by appropriate legislation; and they will also extend legislative encouragemnt and fostering care to the great interest of sheep husbandry.

If they do this they will, in the language of the Manual, cause thousands of Nebraska farmers to engage in the healthful and

remunerative industry of wool growing; and millions of acres of land now idle and unoccupied, will be rendered profitable as sheep walks, and gradually improved in fertility, and furnishing pastoral homes for happy families. It will open the way for a tide of immigration into the back counties of the State "of thousands of the best, most quiet, peaceable, industrious and profitable laborers, who nearly double their numbers annually, demand no wages, commit no crimes, labor assiduously throughout the year, feed and clothe themselves and their masters, make no strikes, utter no complaints, and never *die in debt to man*."

ANNUAL REPORT

OF THE

STATE BOARD OF FISH COMMISSIONERS,

FOR THE YEAR 1879.

Through the kindness of Gen. Livingston, of the Nebraska Fish Commission, we are able to include the first annual report of that Board in this volume. It will be found of great interest:

To His Excellency, Albinus Nance, Governor of the State of Nebraska:

Pursuant to the provisions of an act of the legislature of this state, entitled "An act creating a board of fish commissioners for the propagation and distribution of fish in the public waters of Nebraska," approved February 24, A.D. 1879, we have the honor to make the following

REPORT.

Receiving your excellency's commission appointing us as a board of fish commissioners, under date of June 2, A.D. 1879, communication was immediately opened with the fish commissioners of all other states, and with the United States commissioners, for the purpose of harvesting from their experiences the best and most economical methods of carrying out the intentions of the above quoted act. In the meantime a meeting was held at Omaha, Nebraska, on the twenty-first day of June, 1879, at which Hon. William L. May, of Fremont, Dodge county, and Hon. H. S. Kaley, of Red Cloud, Webster county, and Dr. R. R. Livingston attended. At this meeting Hon. Wm. L. May was elected president of the board, and Hon. H. S. Kaley its secretary; and work was at

once laid out for the ensuing season. The remarkably small appropriation of five hundred dollars per annum, provided in the third section of the act creating the board, being all the means at our command, your appointees on this important work determined to use it solely for the purpose of paying for spawn and its transportation, together with the cost of hatching the same, and for such stationery as might be needed for the transaction of its business. Thus we deprived ourselves of any opportunity to receive out of the appropriation of $500 one cent for personal expenses incurred in travelling, telegraphing, etc., etc. It may not be improper to say here that this would not have occurred had any compensation to the commissioners been provided for, and an adequate appropriation made for carrying out the objects for which the board was created. The exceedingly small amount hazarded by the legislature for this great work was so trifling, compared with the magnitude of the undertaking, that your commissioners could see no other method of doing anything towards hatching and distributing fish unless they sacrificed their own time and expenses for the public weal, and used the little allotted to this work entirely for *propagation and distribution of fish in the public waters of Nebraska.*

Your board visited the hatcheries of Mr. Wm. Mynster, at Council Bluffs, Iowa, and of Mr. James G. Romine, at South Bend, Cass county, Nebraska, and of Messrs. Romine and Decker, opposite South Bend, in Sarpy county, Nebraska; also the hatchery of one of your board (Hon. H. S. Kaley), at Red Cloud, Nebraska. The president of the board visited a number of important hatcheries in the east, among others visiting the carp ponds of the U. S. commission under Prof. Spencer F. Baird, of Washington, D. C.

We expected to receive five hundred thousand (500,000) California salmon eggs, but owing to the paucity of the catch we received only two hundred thousand (200,000). Realizing that we had no means of building any hatchery, nor of paying any experts to hatch these eggs and superintend construction of building and ponds essential to a hatchery, after long deliberation we concluded the following contract with Messrs. Romine and Decker, of South

Bend, Nebraska, to receive and hatch the five hundred thousand (500,000) eggs expected from the California catch:

CONTRACT.

This memorandum of agreement witnesses that Romine & Decker, of South Bend, Nebraska, hereby agree to receive at the station in South Bend, Nebraska, all fish spawn of the California salmon that the Nebraska State Board of Fish Commissioners may desire to hatch during the year 1879, and to convey the same to their hatching house near South Bend and properly care for and hatch the same in a careful manner, and give them the same care and attention as they do to spawn of their own of like character. The said Romine and Decker also agreeing to care for the young fry and to assist to deliver the same to said State Board of Fish Commissioners at the depot in South Bend, free of costs; the said State Board of Fish Commissioners to furnish all cans. It being agreed by said State Board of Fish Commissioners to pay for said hatching and care the sum of thirty-three and one-third cents per thousand eggs delivered to said Romine & Decker, and upon which the above care and attention is bestowed by said Romine & Decker.

It is also mutually agreed that the said State Board of Fish Commissioners shall pay all trouble and expense in feeding the young fry should any remain after the umbilical sac is absorbed; and also to re-imburse said Romine & Decker for any money expended in transporting the eggs from depot or returning the fish to depot at South Bend, Nebraska. It being understood further, that this contract is made upon the basis that said State Board of Fish Commissioners shall furnish not less than five hundred thousand eggs.

Witness our hands and signatures this twenty-seventh day of September, 1879.

NEBRASKA STATE BOARD OF FISH COMMISSIONERS,

Signed. Per H. S. KALEY, *Sec'y.*

ROBT. R. LIVINGSTON.

Signed. ROMINE & DECKER.

As Messrs. Romine & Decker had taken the contract as above for a sum per thousand eggs barely sufficient to pay for the extra help and care required in hatching, they insisted, as an unexpressed condition of the work, that they should have the amount accruing from the work advanced them, so as to enable them to put in the extra hatching troughs and boxes requisite, and enlarge their hatchery for the reception and care of the eggs. This was done, and the amount due upon the half million eggs, amounting to $166.66\frac{2}{3}$, was paid them.

While expressing regret that we only received two-fifths of the eggs expected, your board congratulates the state upon the fine returns from the 200,000 eggs intrusted to Messrs. Romine & Decker, who now have over 190,000 young California salmon as the result of this first attempt on the part of the state to propagate fish. These are soon to be distributed in the various streams and lakes of the state. In this distribution your board will endeavor to so dispose of the young fry as to satisfy all sections of the state; provided, however, that the conditions essential to the preservation, nutrition, and growth of the fish are to be found in the localities desiring to secure a portion of them.

The promise for next year's operations is exceedingly encouraging. We hope to secure a very much larger number of eggs, and have the promise of Prof. Spencer F. Baird that a limited number of "German carp" will be forwarded to us for the use of the state. The only drawback to success, as before stated, will be the very limited amount of money at our disposal to carry out a vigorous planting of our streams and lakes. We, nevertheless, trust that the good sense of the legislature will see the importance of this great work and make suitable provision to insure its complete success.

It may not be out of place in a first report of this character to give a brief outline of the processes employed in fish culture; and as these reports are widely distributed over the state, we trust a few words of advice will not be thrown away.

FISH CULTURE.

The essentials to cuitivating fish are, first, a good spring of clear water situated at a point sufficiently elevated to obtain at least three feet fall to the floor of the "hatching house." This spring should be protected from surface water incident to showers of rain, and it should be kept clear and no sediment allowed to mix with it, as this would cover the eggs and destroy them. The ground below the spring should have enough fall so that a series of ponds can be made, one below the other, and the water run from the first into the second through a wire screen. The hatching house need not be expensive, a simple shed long enough to hold the troughs used in hatching is enough. Upright boards properly battened, and a shingle roof over head, and a plain, rough-board floor will answer. The windows ought to be curtained, to prevent any strong sunlight striking the eggs while hatching. At the end of house nearest the spring, a long reservoir trough, one foot deep and one foot wide should reach across the building, and from this the hatching troughs should be fed, by a small hole in the reservoir trough, with a piece of short tin spouting tacked on, and just long enough to reach over the head of the hatching trough, so as to spill the supply of water into it. The troughs should be about (8) eight inches deep and fifteen inches wide, and made out of good, straight-grained, well-seasoned lumber. At the upper end should be partitioned off a box to receive the supply from reservoir trough, with the side of said box next to compartments fitted with thin strips lying one over the other to regulate the flow of water over the eggs; below this, in the direction of the length of the trough, it should have strips every eighteen inches, about one-half inch thick, and two inches wide, set tightly against the bottom, on edge, so as to divide the trough into nests.

The length of the trough is to be governed by the length of the house, and consequently the number of nests in each trough will be in proportion to that length. There should be sufficient space between each trough, and at their lower ends to admit of a person going between and around them without inconvenience, to

facilitate the cleaning of the troughs and the removal of dead eggs and foreign substances. All the wood used in fish hatching should be well-seasoned, straight-grained, to prevent warping, and carefully painted with coal tar to prevent fungoid vegetation adhering to it. A fall of one inch to eight feet is abundant to secure the flow of water in each trough. The water ways should all be screened, *i. e.*, a fine mesh wire screen, fastened to a frame, the whole painted with coal tar, should be fitted over the outlets. This precaution prevents foreign substances reaching the troughs, and also prevents the young *fry*, when hatched, escaping. Having these precautions and preparations ready, the eggs should be laid in the bottom of each nest without piling—one layer, evenly distributed on the bottom of each nest in each trough, and the water permitted to flow constantly in a very gentle current over and through them. This constitutes the mystery of fish hatching. Absolutely essential to success is cleanliness. No success can attend neglect. If the water becomes "riley" from neglecting to make provisions against admission of surface water, failure in part or whole will follow. The ponds should be protected from sunlight by shade trees. Their size is susceptible to no particular rule, but the larger the better, as the increased size of the pond to some extent prevents the temperature of the water being raised to the point of heat which kills the fish, and perhaps we may place this at 70° Farenheit. Whenever ponds can be constructed so as to have springs in their beds, they are surer to maintain a low temperature during hot weather.

A little taste and skill in planning the ponds adds greatly to their beauty without increasing their cost. The walks between them can be arranged with sufficient space to permit a carriage to be driven around them and a nicely arranged levee, sodded and a few perennial flowers along its top or border, adds greatly to its attractiveness. The main features of the ponds should be ability to keep out surface water, facility for being fed from the waste water from the hatching house, and convenience for one pond emptying through the screened waste way into another—this, of course requiring a slight fall.

After the eggs are hatched the young fish will be found with the umbilical sac hanging to him, and on this he subsists until it is absorbed; after this period he has to be fed. It usually requires about six weeks to hatch the eggs, although *time* varies a great deal, many eggs hatching in a much shorter time, and some requiring longer. As the umbilical sac disappears the fry should be carefully moved to a deeper trough, supplied with fresh spring water, and a waste properly screened, and then fed with boiled liver crushed until it is very fine and watery, and a little of this sprinkled over the water will be eagerly taken by them. Care has to be exercised in feeding that a superabundance of food is not given, thereby contaminating the water with uneaten portions, liable to become putrescent and render the water unhealthy. After a hatching is complete the fry should be removed to a pond adapted to their age, and thus year after year unto maturity, each pond exhibits its contents of a uniform age.

In this necessarily brief description many of the particulars dwelt upon and elaborated by some fish culturists are omitted, and others only mentioned, for in this report it could hardly be expected that anything more than a brief practical description of the essentials towards hatching fish spawn should be given. There are many other methods of hatching, some of which are considered far superior to that described. The Holton box, with its trays, is by many esteemed the *ne plus ultra;* but we have chosen to describe a method which is so simple and economical that any farmer who has a good spring on his grounds can, with a few dollars for lumber, construct a "hatchery" which will prove just as efficient as more expensive machinery, although perhaps not quite so "pretty."

We have even refrained from groping around in the regions of mythology for the origin of this art. We do not care much about its antiquity, so that we can realize and cause our people to appreciate its importance. To this end we desire to call your attention to the growth and increase of fish.

GROWTH.

The statistics of nearly all the states where fish commissions have been established harmonize in their testimony of the growth of fish. This increase in actual weight is so wonderful that the aggregates astonish most readers, and induce incredulity in others. The old, trite saying, this is a "fish story," is neither argument nor sense, and does not dispose of the facts which honest fish commissioners are now placing before some thirty-two legislatures in this Union. There is something nobler in legislating to provide food, cheap food, the brain invigorating food, which every citizen may enjoy *ad libitum*, than in devising methods to investigate petty offences and squander the time and money which could be so much better employed.

Take for example the one hundred and ninety thousand fry of the California salmon now on hand. Their weight to-day is probably 475 pounds; in one year from now they will weigh over 35 tons; in two years they will have increased to 190 tons, and so on until in seven years' time they will yield a weight, fabulous as it may appear, of nearly 1,425 tons; and if no more than 200,000 fry of this class were added to our streams each year, at the end of seven years there would be an accumulation of nearly 5,286 tons of the finest and best of food, without taking into account any natural increase or any accidental losses, which we leave to balance each other.

These figures, however, are based upon a very limited and—to draw it mildly—a very discouraging appropriation. Should the good sense of the legislature encourage the efforts already made to replenish our waters with food fishes, and by a liberal appropriation enable your commissioners to expand their efforts in this direction, these figures would be absolutely dwarfed by the results.

The varieties best suited to the waters of this state are perhaps the indigenous fishes, but the trials of fish commissioners in other states, and notably in Iowa, induce us to believe many fish can be introduced and retained in Nebraska which have never existed here. There are several spring-fed brooks in this state, which

have all the requisites considered necessary for the growth and production of brook trout. This magnificent fish, always considered *recherche* with the epicure as well as the disciple of Walton, no doubt can be successfully planted in the main stream and numerous branches of the Bow, and no doubt other spring-fed streams will be found, in which they will survive the hotter periods of our summer. That splendid monarch of the perch family, the black bass, can also be distributed to many of our inland lakes and streams, and we have no doubt that the larger lakes in the northwestern part of the state will afford good waters for the white fish and lake trout, now so successfully propagated by the commission in Wisconsin; while the land-locked salmon can be planted in the same waters with every reasonable prospect of success.

Of all the fishes considered desirable for the waters of Nebraska there are none, perhaps, so well suited as the German carp. This fish is of elegant flavor, and most desirable for table use. It is not predatory—does not destroy its own young or those of others; it lives on vegetable productions, is adapted to roily waters and ponds, and attains a weight of ten pounds at maturity. Among its most desirable features is the fact that it is exceedingly prolific.

Your commissioners expect an allotment of these fine fish from United States Commissioner Prof. Spencer F. Baird, in the early spring. Not being provided with any ponds nor any locality adapted to their care by the state, we shall be compelled to entrust them to the care of Messrs. Romine & Decker, of South Bend, Sarpy county, Neb., until we can make suitable arrangements for planting them.

The field of operations in this state covers over 6,000 miles of stream and over 11,000 acres of inland lakes, as will be seen from the table of streams and lakes hereto appended for your information. In this connection your board would state that the figures in this table have been carefully compiled and calculated by Mr. Herman Schmidt, chief draughtsman in the office of the Surveyor General of Iowa and Nebraska, and exhibit a most interesting statement to the citizens of Nebraska, showing accurately what a

much larger extent of waters are within our borders than most people had supposed.

Certainly no more laudable work could be fostered by our legislature than the stocking of these waters with food fishes for the benefit of the whole people, and the entire feasibility of this work, at a comparatively small cost, should receive the hearty support of all good citizens.

A LIST OF THE STREAMS OF NEBRASKA,

Giving their length, carefully compiled from the notes and plats in the United States Surveyor General's office, by Herman C. Schmidt, Esq., chief draughtsman:

NORTH OF PLATTE RIVER.

	MILES
Main Platte river	350
North Platte river	200
South Platte river	90
Niobrara river	400
White river	60
Lodge Pole creek	100
Lawrence Fork	70
Lawrence Fork	50
Snake river	80
Boardman's creek	40
Long Pine creek and branches	80
Elkhorn river	390
Bell creek	45
Maple creek	80
Logan creek branches	140
Plum creek	40
Union creek	30
Papillion	60
Shell creek	90
Loup river with North Fork	290
South Fork Loup river	170
Middle Loup	230
Dismal	70
Calamus	80
Beaver creek	50
Council creek	50
Cedar creek	120
Timber creek	15
Spring creek	30
Prairie creek	130
Wood river	150

SOUTH OF PLATTE RIVER.

	MILES
Republican river	350
Stillwater creek	20
Willow creek	20
Crooked creek	30
Indian creek	30
Turkey creek	30
East and West Muddy	50
Medicine creek	90
Red Willow creek	80
Whelman's Fork & Stinking water	150
Driftwood creek	60
Beaver creek	110
Sappa creek	45
Prairie Dog creek	20
Little Blue	160
Cottonwood creek	30
Pawnee creek	30
Big Sandy	65
South branch Big Sandy	30
Muddy creek	35
Big Blue	170
West Blue	100
Beaver creek	60
Lincoln creek	65
Turkey creek	70
Swan creek	30
Cole creek	20
Indian creek	35
Big Nemaha river	125
South Fork Nemaha	80
Muddy creek	80
Long Branch	25

Total north of the Platte	3840
Total south of the Platte	2645
Total streams	6485

Little Nemaha	90
North branch	40
South branch	40
Muddy creek	25
Spring creek	20
Weeping Water	35
Salt creek	60
Wahoo	40
Total South Platte	2645

A LIST OF THE LAKES

in the surveyed portion of Nebraska, given by township and range, showing the number and acreage of lakes in said townships:

TOWN.	RANGE.	NUMBER.	ACRES.
25	10 East	1	300
20	7 "	1	30
23	8 "	1	30
6	14 "	1	20
17–18	12 "	1	127
16	13 "	1	74
26	5 West	1	15
25	15 "	1	130
27	16 "	1	5
28	16 "	2	55
27	17 "	5	175
28		4	430
29		2	130
17	22 "	2	15
17	23 "	1	3
31	25 "	1	10
29	27 "	5	645
30		3	970
32		2	275
27	28 "	4	175
28		6	290
29		4	865
30		5	1150
31		4	1020
29	29 "	4	800
30		4	530
27	31 "	1	30
21	34 "	2	80
26	35 "	1	5
27		1	5
24	36 "	1	40
20	37 "	8	98
25	37 "	1	80
34	37 "	1	25
20	44 "	1	700
31	45 "	1	15
20	45 "	1	460
		87	9807
There are 12 more lakes unsurveyed which at same average would give		12	1353
		99	11160

There are a great many more streams and lakes in the state than those enumerated in the above tables. Many of those not named

are small, but in the aggregate would swell the totals far above the figures given. Enough, however, is shown to satisfy any reasonable citizen that we have abundant waters and that good government should utilize them as a means of increasing our food fishes.

We append hereto a corrected list of fish commissioners, carefully copied from the Chicago *Field*, a weekly journal, devoting much of its space to valuable articles on fish culture and the natural history of fishes, and we commend this ably edited paper to all interested in the propagation of fish as one that will amply repay their subscription by furnishing information of vast importance, especially to those not specially skilled in the art.

LIST OF FISH COMMISSIONERS.

UNITED STATES.

Professor SPENCER F. BAIRD ..... Washington, D. C.

ALABAMA.

CHARLES S. G. DOSTER ..... Prattville.

CALIFORNIA.

S. R. THROCKMORTON ..... San Francisco.
B. B. REDDING ..... San Francisco.
J. D. FARWELL ..... Alameda.

COLORADO.

W. E. SISTEY ..... Brookvale.

CONNECTICUT.

W. M. HUDSON ..... Hartford.
ROBERT G. PIKE ..... Middletown.
JAMES A. BILL ..... Lyme.

GEORGIA.

THOMAS P. JANES (commissioner of agriculture and *ex-officio* commissioner of fisheries) ..... Atlanta.

ILLINOIS.

N. K. FAIRBANK ..... Chicago.
S. P. BARTLETT ..... Quincy.
J. SMITH BRIGGS ..... Kankakee.

IOWA.

B. F. SHAW ..... Anamosa.

KANSAS.

D. B. LONG ..... Ellsworth.

KENTUCKY.

WILLIAM GRIFFITH, president, 166 West Main street ..... Louisville.
JOHN B. WALKER ..... Madisonville.
Hon. C. J. WALTON ..... Munfordsville.
Hon. JOHN A. STEELE ..... Versailles.
Hon. J. H. BRUCE ..... Lancaster.
P. H. DARBY ..... Princeton.
Dr. S. W. COOMBS ..... Bowling Green.
Hon. JAMES B. CASEY ..... Covington.
Gen. T. T. GARRARD ..... Manchester.
Hon. W. C. ALLEN ..... Owingsville.

MAINE.

E. M. STILWELL ..... Bangor.
EVERETT SMITH ..... Portland.

MARYLAND.

T. B. FERGUSON ..... Baltimore.
THOMAS HUGHLETT ..... Easton.

MASSACHUSETTS.

THEODORE LYMAN ..... Brookline.
E. A. BRACKETT ..... Winchester.
ASA FRENCH ..... Boston.

MICHIGAN.

ELI R. MILLER ..... Richland.
A. J. KELLOGG ..... Detroit.
Dr. J. C. PARKER ..... Grand Rapids.

MINNESOTA.

First District, DANIEL CAMERON ..... La Crescent.
Second District, WILLIAM W. SWENEY, M.D ..... Red Wing.
Third District, R. OMSBY SWENEY, chairman ..... St. Paul.

MISSOURI.

I. G. W. STEEDMAN, chairman, No. 2,803 Pine street ..... St. Louis.
JOHN REID ..... Lexington.
SILAS WOODSON ..... St. Joseph.

NEVADA.

H. G. PARKER.....Carson City.

NEW HAMPSHIRE.

SAMUEL WEBER.....Manchester.
LUTHER HAYES.....South Milton.
ALBINA H. POWERS.....Plymouth.

NEW JERSEY.

Dr. B. P. HOWELL.....Woodbury.
Col. E. J. ANDERSON.....Trenton.
THEODORE MORFORD.....Newton.

NEW YORK.

R. BARNWELL ROOSEVELT, 76 Chambers street.....New York.
EDWARD M. SMITH.....Rochester.
RICHARD U. SHERMAN.....New Hartford.
EUGENE G. BLACKFORD, 809 Bedford Avenue.....Brooklyn.

NORTH CAROLINA.

L. L. POLK (commissioner of agriculture).....Raleigh.
S. W. WORTH (superintendent of fisheries).....Morgantown.

NEBRASKA.

ROBERT R. LIVINGSTON.....Plattsmouth.
H. S. KALEY.....Red Cloud.
W. L. MAY.....Fremont.

OHIO.

J. C. FISHER, president.....Coshocton.
R. CUMMINGS, treasurer.....Toledo.
L. A. HARRIS, secretary.....Cincinnati.

PENNSYLVANIA.

H. J. REEDER.....Easton.
BENJAMIN L. HEWIT.....Hollidaysburg.
JAMES DUFFY.....Marietta.
JOHN HUMMEL.....Selinsgrove.
ROBERT DALZEL.....Pittsburg.
G. M. MILLER.....Wilkesbarre.

RHODE ISLAND.

ALFRED A. REED.....Providence.
JOHN H. BARDEN.....Rockland.
NEWTON DEXTER.....Providence.

SOUTH CAROLINA.

A. P. BUTLER.....Hamburg.

TENNESSEE.

W. W. MCDOWELL.....Memphis.
GEORGE F. AKERS.....Nashville.
W. T. TURLEY.....Knoxville.

UTAH.

A. P. ROCKWOOD (absent; information from Prof. J. L. Barfoot, curator Desert Museum).....Salt Lake.

VERMONT.

M. GOLDSMITH.....Rutland.
CHARLES BARRETT.....Grafton.

VIRGINIA.

Col. MARSHALL MCDONALD.....Lexington.

WEST VIRGINIA.

HENRY B. MILLER.....Wheeling.
CHRISTIAN S. WHITE.....Romney.
N. M. LOWRY.....Hinton.

WISCONSIN.

GOV. WILLIAM E. SMITH, *ex-officio*.....Madison.
PHILO DUNNING, president.....Madison.
J. V. JONES.....Oshkosh.
C. VALENTINE, secretary and treasurer.....Janesville.
MARK DOUGLAS.....Melrose.
JOHN F. ANTISDEL.....Milwaukee.
CHRISTOPHER HUTCHISON.....Beetown.
H. W. WELSHER, superintendent.....Madison.

DOMINION OF CANADA.

W. F. WHITCHER.....Ottawa.

In conclusion your board would express their thanks to the managers of the Union Pacific and Burlington & Missouri River R. R.'s who have very generously furnished free transportation, and directed their train conductors and baggage men to afford us every facility for the safe transit of the fry. In fact, without this gener-

osity on their part we could not have afforded to provide for the planting of the young fish, our means being too limited.

Very respectfully, your obedient servants,

WILLIAM L. MAY, *President.*
H. S. KALEY, *Secretary.*
ROBT. R. LIVINGSTON,
Fish Commissioners for the State of Nebraska.

AN ESSAY ON THE MANUFACTURE OF BEET SUGAR.

Including Cost, Method, Difficulties to be Overcome and Conditions For Attaining Successful Results.

By WALTER E. WELLMAN.

THE SUGAR BEET.

All varieties of the beet contain sugar, and may be used in the manufacture of that article; but the variety most employed for the purpose is the *White Silesian*, which is generally known as the sugar beet. It is slender and tapering in shape, and its skin and flesh are white and firm. It penetrates the soil to a depth of twelve inches, and shows but little above the surface. The largest roots of this variety weigh five pounds, those of half that weight being more valuable and common.

The composition of the beet-root is very complex. It contains on an average 10 per cent of sugar, 3 of pectine, soluble salts, etc., and 83 per cent. of water, thus making 96 of juice; the remaining four parts consist of albumen, woody fibre, and insoluble salts.

The saccharine part of the beet-root extends from the center of the plant nearly to its surface, and consists of alternate layers of cellular and vascular tissue. The best roots for the manufacture of sugar are those in which the size of these layers does not exceed from one quarter to one-eighth of an inch, when the bulbs weigh about two pounds.

PROCESS OF MANUFACTURE.

The first manipulation to which the beets are subjected is for the purpose of washing away the dirt which has adhered to them. This is not a difficult matter to accomplish, the leaves and roots

having, of course, been removed at the time the plants were gathered from the field. The *root-washer* is a revolving cylinder composed of slats, separated so as to allow the water and small rootlets to pass between them. This drum rests in a tank of water, in which the beets, as they rub against each other, are thoroughly cleansed.

On leaving the root-washer the beets are pitched into the jaws of the pulper, where they are seized by spikes and blades attached to cylinders revolving at the rate of 800 times per minute, which rapidly reduce them to a fragmentary form. These fragments then pass into the pulper proper, which by a process similar to that used by the other machine grinds them so fine that no solid particles of any size remain. The pulp is then placed in bags of woolen cloth or of stout, unbleached hemp of open texture, the quantity in each being only enough to make, when flattened, a layer two inches in thickness. The sacks are then piled up one upon another, separated by sheet-iron trays, and are first submitted to a preliminary pressure in a hand press, which extracts a large quantity of the juice contained in the pulp. They are then transferred to the hydraulic presses, where the remainder of the juice is squeezed out. The action of the hydraulic press must be slow and carefully governed, for a too sudden pressure would be apt to ruin many of the sacks.

After the pulp has been sufficiently pressed it is found to be a dry and brittle cake, of which a ton measures 60 bushels, and contains the flesh of eight tons of roots. This can be manufactured into beer, spirits, vinegar, or paper; but its most common use is food for cattle.

As quickly as possible the expressed juice is pumped up to the defecating pans and heated to a temperature of 140° Fahr.; this is necessary for the prevention of fermentation.

The old plan of pumping up the juice has been replaced in all modern sugar works by the cleanly, simple, and rapid process of elevation by steam pressure applied directly to the upper surface of the juice contained in a closed vessel. This is done by means of the *monte-jus* (literally mount juice), an upright, strong iron

boiler sunk into the ground, the top only being allowed to project above the floor of the building.

This boiler may be short or long, according to the capacity required. In its upper portion are several pipes and cocks: one of these is the pipe through which the juice is admitted from the reservoir into the *monte-jus;* another is a small cock for ingress and egress of air and evacuation of steam; still another is the pipe for admitting steam, its orifice being bent upward so as to cause the entering steam to strike the inner surface of the boiler head. From the bottom of the boiler extends the pipe through which the liquid is forced from the vessel to the level above by the pressure of steam in the upper end of the *monte-jus.*

The defecating pan being properly filled, the temperature of the juice which it contains is raised to 180°, a temperature just bearable to the naked hand, when either slaked lime in the proportion of one pound to 80 gallons of juice, or a quantity of milk of lime is added to the hot juice. It is known by the manufacturer when the right proportion of lime has been added by the light, clear, amber color borne by the defecated liquor. If, on the contrary, the juice is of a greenish hue, and contains many floating particles, the quantity of lime administered has been insufficient.

The scums formed during the process of defecation being rich in saccharine matter, they must be made to give up as much as possible of their valuable contents. For this purpose they are collected in a special reservoir provided with a wide-mouthed faucet, through which they are filled into sacks. These sacks, made of a strong, close-woven tissue of raw flax, are laid to drip in special tanks, where about two-thirds of the juice is run out of them in a few minutes. They are then subjected to the action of powerful presses, and the liquid obtained is taken directly to a *monte-jus*, and thence to the carbonation pans; while the juice from the reservoir is made to pass first through a filter of fine sieves, and then through a quantity of bone-black, placed lightly in a conical vessel of copper or iron. These filtering cones are from 6 to 12 feet high, and are furnished with false bottoms, over which a filtering cloth is spread.

The scums are worked while hot from the defecating pans, and must never be allowed to cool before they are pressed. As the contents of the scum sacks are of a slimy, greasy nature, which would work their way out during the pressing without certain precautions, it is necessary to shake the sack, so that its contents will collect in the bottom, and to then fold through the middle and press flat upon a table.

The filtered liquor now has a pale straw color, and is ready for evaporation. This may be effected in open pans, in *vacuum pans*, or in a combination of both varieties. The open pan is a mere boiler, subject either to the direct action of the fire or by steam passing through double bottoms, or coil pipes. The vacuum pan is a great improvement over the open boiler, and has almost universally superseded it. The vacuum pan depends for its action on the principle that liquids boil at greatly reduced temperatures when relieved from the pressure of atmosphere. The pan itself is a copper or iron globe for the reception of the juice and liquor, and contains a coil of pipe into which steam is admitted. The space between the pan and its iron jacket is also filled with steam. The first-class vacuum pan is provided with appurtenances for cleansing; a *proof-stick*, by which the evaporating syrup can be examined without disturbing the vacuum existing in the pan; a thermometer for ascertaining the temperature at which the liquor is boiling, and a barometer or gauge for testing the pressure within the pan.

In operating with the vacuum pan the syrup is run in as quickly as possible, until the whole of the heating surface is covered. The steam is then turned on, and the temperature of from 180° to 190° maintained. When the syrup begins to granulate or form crystals the temperature is lowered to 160°, and just before the evaporation is completed, and the sugar ready to be let out, the temperature is reduced to 145°, or the lowest temperature at which proof sugar boils. The sugar boiler takes out a sample of syrup by means of the proof-stick, and drawing it out against the light between his finger and thumb, ascertains that the crystals are in a sufficiently forward state. Then more syrup is repeatedly

admitted, and the crystals increase in size to the end of the operation, those first formed acting as nuclei. A *skip* or pan full of sugar should be made in from $1\frac{1}{2}$ to $2\frac{1}{2}$ hours from the commencement of boiling. The concentrated juice, or proof sugar, consisting of a large number of small crystals floating in syrup, is let down at 145° through a valve in the bottom of the pan into the *heater*, a vessel much resembling a common kettle, which is placed directly beneath the pan.

In the heater the sugar is raised to 180°, being at that temperature best adapted to the hardening and completing the formation of the crystals. During the heating the sugar is stirred with wooden oars to prevent granulation; it is ladled or run out into buckets or scoops, and hence poured into moulds or small cones. The hole at the bottom of each cone is plugged with paper, which is not removed until the morning after the day on which the moulds were filled. The mould room is kept at the temperature of 100° for three or four days, during which time the sugar goes under the process of *liquoring:* this consists in pouring on the top of the moulds a solution of pure sugar, which percolates through and carries with it the small quantity of coloring matter not previously removed. The drainings are collected and boiled down with other refuse of the sugar house into an inferior sugar.

This may be termed the Orthodox Method, since it is the one most generally employed. There are other processes, however, differing either slightly or materially with the one sketched.

Prominent among these is the process of removing organic and inorganic matter in the partially defecated juice detrimental to the crystallization of the sugar, by "carbonatation;" carbonatation consists in the saturation of the defecated juice by means of carbonic acid gas, produced by the consumption of charcoal. This method has been adopted in places, but the results have not warranted the additional outlay of money in machinery which it requires.

The process of *maceration*, which has been conducted in a variety of ways, consists principally in cutting the bulbs into thin slices, digesting these repeatedly in warm water. According to

one plan, the slices are suspended in baskets with an equal weight of water at 167°, and allowed to digest for half an hour; a liquor is thus obtained marking 3° on Baume's ærometer, when the slices are taken out and fresh slices added, the liquor thus obtained having a density of 6° B., etc. This plan is not in anything like general or successful operation.

In all of these various methods the results and economy are said to be so nearly the same that there is little choice between them, however emphatic the advocates of any particular process may be in their commendation.

COST.

This is an important item, of course, and one in which it is hard to give reliable data. Still, from statistics and reports enough may be gathered to make a reasonably correct estimate of the cost of machinery and apparatus, and also of the expense of working up a given amount of beet root.

The following are estimates and specifications for the establishment of a sugar factory calculated to work an average of 150,000 pounds of beet root per twenty-four hours, during a campaign of from four to five winter months, this quantity corresponding to the average product of 500 acres:

PRODUCTION OF STEAM.

Beet root sugar works consume a large amount of steam for driving machinery and for use in the condensing and evaporation of the juice. It has been found that a well managed sugar factory, employing vacuum pans and all other improved apparatus, of the capacity mentioned, requires 120-horse power boilers. The cost of these and their appurtenances may be estimated as follows:

Three steam boilers of 40-horse power each, with fire-boxes, grates, valves, etc., $4,000.

Appurtenances, including reservoirs for return steam from all parts of the works, and a 4-horse power engine for supplying the boilers with water, $600.

Total cost of appliances for the production of steam, $4,600.

In the washing, pulping, and pressing department of a 500 acre beet root factory will be required machinery as follows:

One horizontal 20-horse power engine, and two pumps capable of delivering 37,000 gallons per hour, $2,000.

One beet root washer, 12 feet long, of iron, $350. It can be made of wood, however, at less expense.

One pulping machine, with double drum, and capable of working 150,000 pounds of beets in twenty-four hours, with extra drums and knives, $1,000.

One sack-filler and hand press, $350.

Six hydraulic presses, each with 12-inch pistons and 40 inches stroke, $5,000.

One iron frame, with two hydraulic pumps fitted to work the eight hydraulic presses, $1,200.

Six "returns," stops, and wrought iron pipes for the hydraulic presses, $200.

One *monte-jus* of a capacity of 75 cubic feet, with all its accessories, and a connecting reservoir of same capacity, $200.

Pulleys, belts, and miscellaneous appurtenances, $750.

Total cost of washing, pulping, and pressing department, $10,850.

This, however, does not include the cost of sacks and iron trays used in the pressing, which number 4,000 each, and cost, together with a sack-washing machine, $3,000 more, swelling the total for this department to $13,850.

The machinery required for the defecating department includes the following:

Three copper pans, with cast-iron false bottom, same capacity as *monte-jus*, $1,350. Appurtenances, $150.

The apparatus necessary for the proper working of the scums is estimated as follows:

One reservoir for receiving the scums from the defecating pans, $60.

Two cast iron tables for manipulation of scum sacks, and two iron hand presses, $465.

One *monte-jus* and its special reservoir, each of a capacity of 30 cubic feet, $135.

Total for scum apparatus, $600.

The filtration department of an estalishment of the capacity heretofore mentioned would comprise:

Seven filters fifteen feet high, with copper pipes, cocks, etc., $2,150.

An "outside" set of pipes and cocks for distribution of steam, juice, syrup, etc., $350.

Two feed reservoirs, each of a capacity of 750 gallons, and three receiving reservoirs, each of a capacity of 230 gallons, $300.

Gutters, and miscellaneous articles, $250.

Total cost of the filtering department, $3,050.

In the evaporating and boiling department the specification is about as follows:

One copper vacuum pan, with all fixtures complete, $5,000.

Two horizontal wet air pumps, $1,100.

One small iron vacuum pan, $2,000.

Two iron heaters, each of a capacity of 750 gallons, $315.

Four reservoirs, each of a capacity of 1,000 gallons, and one *monte-jus* of a capacity of fifty cubic feet, $250.

Total cost of the concentration and boiling department, $8,665.

In the crystallization department are required reservoirs, *monte-jus* and gutters, pipes, treacle jars, etc., costing about $2,000.

To the foregoing estimates must be added piping and cocks for the whole establishment, vats, various tools, etc., all costing perhaps 4,500.

The total cost of the establishment of a sugar factory capable of consuming 150,000 pounds of roots per day, and of working up the product of 500 acres during the proper season for manufacturing —from the thirty-first of October to the last day of February— may be summed up as follows:

Apparatus for production of steam	$ 4600 00
Machinery in the washing, pulping, and pressing department	13850 00
Defecating apparatus	11500 00

Scum apparatus	600 00
Filtering department apparatus	3050 00
Concentration and boiling apparatus	8665 00
Crystallization apparatus	2000 00
Miscellaneous appurtenances	4500 00
Total	$34165 00

This represents the cost of machinery alone. The building should cost half as much more. A capital of one hundred thousand dollars would be necessary for the successful establishment of a factory of the capacity mentioned.

LABOR AND GENERAL ESTIMATES.

The only skilled hands really needed in a beet root sugar manufactory are an engineer, a hydraulic pump man, a defecator, a sugar boiler, and a bone-black burner, as most of the operations are of a similar character, easily taught to intelligent workmen.

Below is given a general estimate of the cost of working a 150,000 pounds per diem factory, on the basis of unskilled labor at $1.50 for twelve hours, the work being continued night and day:

I.—WASHING AND PULPING.

Transportation and washing of the beets, 14 men, 2,800 days' labor, at $1.50	$4200 00
Press department, 28 men, 5,600 days' labor, at $1.50	8400 00
Sack-washing and cleaning, 8 women, 1,600 days, at $1.50,	2400 00

II.—DEFECATION.

4 men, 800 days' labor, at $1.50	1200 00

III.—SCUMS.

3 men, 600 days' labor, at $1.50	900 00

IV.—FILTRATION.

3 men, 600 days' labor, at $1.50	900 00

V.—BOILING AND CONCENTRATION.

4 men, 800 days, at $1.50	1200 00

VI.—CRYSTALLIZATION.

6 men, 1,200 days, at $1.50	2000 00

VII.—STEAM GENERATING.

3 men, 600 days, at $1.50	900 00

IX.—PACKING.

5 men, at $1.50	750 00

X.—CARE OF PULP, ETC.

3 men, 600 days, at $1.50	900 00

XI.—MANAGEMENT.

One general superintendent and two overseers	4,000 00
Book-keepers and clerk	1800 00

XII.—EXTRAS.

Carpenter, plummer, smith, for repairs	600 00
Extra pay to skilled laborers	2000 00
General total of cost of labor for one year's campaign	$32350 00

The quantity of coal consumed by such an establishment would average 700 tons, which, at $7 per ton (these estimates are made with reference to conditions and prices in Nebraska), would cost $4,900.

The bone-black used in filtration—30,000 pounds—would cost for the first outlay, at 6 cents per pound, $1,800.

The lime used would amount to 4,500 bushels, and cost about $1,200.

The cost of 15,000,000 pounds of beet root would, at $4 per ton, be $30,000. Experience proves, however, that the roots can be produced for less money than the sum mentioned.

ANNUAL EXPENSES.

Summing up the above it is found that the yearly expenses will amount to:

Labor	$ 32,350
Coal	4,900
Boneblack (waste)	500
Lime	1,200
Purchase of beet roots	30,000
Adding 20 per cent for incidentals	13,000
Total	$ 81,950

This can be safely estimated as the cost of running such an establishment for 100 days, it reducing a total of 7,500 tons of beet roots in that time.

The production and realization of such an establishment would be about as follows:

Sugar from 7,500 tons of beets, at 8 per cent of sugar, the sugar being sold at $8 per cwt $96,000

Aside from the sugar, which alone would pay expenses and leave a handsome margin, remains the value of the pulp—nearly 3,000,000 lbs—and of the syrup not condensed into sugar.

THE DIFFICULTIES TO BE OVERCOME

are not special. The manufacture of sugar from beet roots is no longer an experiment. Machinery of the most improved patterns is in the market, and experienced men can be obtained without great outlay of money. The difficulties to be overcome are chiefly of that character which embarrass all manufacturing industries. They can be better described under the heading of

CONDITIONS NECESSARY FOR OBTAINING SUCCESSFUL RESULTS.

Many conditions must combine in a favorable manner to insure the success of the manufacture of beet roots. These conditions are mainly such as must accrue in the prosecution of any enterprise from which success and profit are expected. Good buildings; first-class machinery; a supply of crude materials; a market for products; sufficient capital to continue operations while taking advantage of, or while using influence upon these markets; and a system of manufacture and economy which enable production to be made at an expense sufficiently less than market value to insure a reasonable profit. To a well-appointed beet sugar factory a matter of prime importance is the

SUPPLY OF BEETS.

This can be secured either by what is termed "custom production," *i. e.*, the farmers living in the vicinity of the works producing the roots and selling them at market prices as he does his wheat or corn, or by a farm connected with and convenient to the factory. Either plan has its peculiar advantages, depending much upon the willingness of the farmers to produce, and upon the ability of the manufacturer to establish and maintain a farm. If these plans be considered with a view to their adaptability to the prairies of the West, the conclusion that a factory situated in the center of a section of land, and connected with its various parts by tramways for the facilitation of the transportation of the beets, and the whole being operated upon strictly scientific and economic principles, would be the one most liable to result in a satisfactory dividend upon the investment; while for the benefit of the farmers and the promotion of the development of the country, the plan of purchasing the roots by weight from the agriculturists would be better adapted.

PRODUCT PER ACRE.

In France the average yield of beets is from fifteen to eighteen tons per acre, frequently rising to thirty, and often to forty tons,

while there is a well authenticated account of a crop of 68 tons to an acre.

A crop of beets was raised in Illinois in 1865 under the following disadvantageous circumstances: New prairie land was broken up, and the seed planted on the upturned sod, a course rarely pursued by good farmers anywhere; the beet requiring for its proper development a soil previously cultivated, in which the sod has been entirely rotted. The season was extremely dry, and the yield averaged from ten to twelve tons only, to the acre, of beets containing about 12 per cent. of sugar. And yet the total cost, including the breaking up of the land, harvesting and transportation, was three dollars and forty cents per ton.

The "Germania Sugar Company," of Chatsworth, Ill., raised 4000 tons of sugar beets on 400 acres, at an expense of $4 per ton. Since that time, however, they are said to have reduced the cost of production to $2.70 per ton by the introduction of improved machinery. The Mitchell nurseries, near San Jose, California, have produced 50 tons of good beets to the acre.

Experience has proved that the average cost of cultivating sorghum, broom-corn, mangel wurzel, and sugar-beet is about the same. From this practical farmers can estimate for themselves the probable cost of production.

From a tabular statement of the cost of cultivating crops of broom corn, ruta bagas, mangel wurzel, and sugar beet in the state of Massachusetts, it is learned that the average yield of roots per acre was $25\frac{6}{10}$ tons; the cost per ton $2.72; the value of manure applied averaged $26.28 per acre, and the cost of cultivation, exclusive of manure, which need not be reckoned in estimates for the production in the west, was $29.84 per acre, or $1.16 per ton of roots.

The comparative cost of cultivating and harvesting an acre of beets and an acre of wheat in France was $27.75 for the beets and $20 for the wheat.

The ease of tilling western lands and the labor-saving machinery of various kinds furnished by American manufacturers will serve in lieu of the cheaper labor of New England and of France.

There is no reason why the rich, sandy loam of the prairies will not yield from 15 to 25 tons of beet root to the acre, at a cost of $30 in tillage and harvesting. If manufactories were convenient, so as to afford a market, the value of beet sugar to the farmer as a crop cannot well be doubted, especially when it is considered that no other crop is less exhaustive to the soil.

Another important condition is that the utmost

ECONOMY

of materials must be exercised in the manufactory. The scums must be utilized, and all syrup left after the crystallization condensed into molasses. The disagreeable taste of beet-root molasses may be removed by simply boiling it carefully with a minute quantity of sulphuric acid, and neutralizing the excess of acid by powdered chalk or limestone. Phosphoric acid has also been used for this purpose. It is found that in the reduction of 75,000 tons of roots 5,000 gallons of molasses, worth about $1600, may be saved. The bone black used in filtration or carbonatation may have its original properties restored to it by burning, and all first-class establishments have furnaces attached to the sugar works for that purpose; the saving thereby effected amounts to considerable during a season's work.

The sack-repairing and washing-room is also a highly necessary adjunct to the sugar factory; for the sacks used to hold the pulp while it undergoes the pressure of the hydraulic presses are often torn in a manner which render their further use undesirable without repairs. The sacks, as do also the root-pulping machines and gutters of the presses, require a thorough cleansing two or three times during the 24 hours; otherwise fermentation, highly detrimental to the finish of the sugar, would take place in the syrup, and what is called "smear" affect the machinery and whole apparatus. Cases of "smear" have been known that stopped work in the entire factory for a day or two, so rapidly does their affection spread to all parts of the work.

An abundant supply of water is an important consideration in the locating and operating of a sugar establishment. The first

institution for the manufacture of sugar from beet root in Illinois was troubled by a lack of water, and its success thereby seriously deteriorated. In a factory for the daily working of 150,000 pounds of beets the quantity of water needed per hour is computed at 1882 cubic feet, or 14,080 gallons.

But the most important item in the economy of beet root sugar manufacture is the utilization of the spent pulp, or the flesh of the beets from which the juice has been extracted. In Europe it is much valued as a food for fattening animals, where it is regularly sold and used for that purpose. A careful analysis shows this pulp to contain, in round numbers, 30 per cent of dry feeding matter, and also demonstrates the following facts:

1. That an appreciable amount of sugar is retained in the pulp.
2. That a large proportion of the fibre is readily digestible; and
3. That beet root pulp contains a considerable proportion of albuminous or flesh-forming matters.

When beet root pulp is kept for any length of time it turns decidedly acid, and in that state is quite as much relished by cattle and sheep as when fresh.

The plan of preserving beet root pulp for feeding purposes is extremely simple. All that is necessary is to dig a trench in the earth, to place in it the pulp, and to cover the heaps with the earth from the trench. It may be in that way kept for years in good condition, if desirable. The average amount of pulp is 20 per cent of the original weight of beets, and it is almost a universal custom in Europe for farmers to contract to receive back in pulp 20 per cent of the weight of beets furnished, for which the farmers pay from two to two dollars and a half per ton. From the reduction of 7,500 tons of beet root would accrue 1,500 tons of pulp, which, sold at $2.50 per ton, would net $3,750.

Repeated experiments have proved that for feeding stock three tons of pulp are fully equal in value to one ton of the best hay. Cattle are very fond of it, and by its use are fattened for the market in one hundred days. The most approved method of feeding is to allow each ox, daily, 80 pounds of pulp, with five pounds

each of chopped straw and oil cake; a cow 70 pounds of pulp and five pounds each of straw and cake; a sheep six pounds of pulp, half a pound each of straw and oil cake, and one pound of chaff.

Chaptal, before quoted, says of the pulp: "This food is almost dry; it has not the disadvantages of grasses or roots, nor of dry forage. It does not ferment, and is not laxative, like the former, nor does it heat and produce constipation, like the latter. It contains almost all the nutritive principles of the beet."

Another thing necessary to the success of a beet root sugar manufactory is that the quality of the sugar produced shall be such as to give it a market as a first-class article. The fact that nothing but beet sugar is used in many of the chief cities of Europe is evidence enough of its quality being all that could be desired. It has been perfectly well ascertained that properly refined beet sugar cannot be distinguished from the best sugar of sugar cane, either by taste, appearance, or chemical analysis; the two are wholly identical.

The people of the State of Nebraska are to be congratulated on their good fortune in possessing all the "conditions necessary for attaining successful results" in the manufacture of sugar from the beet; and there is nothing save a want of capital and men with enterprise to prevent the culture and manufacture of beet root sugar from becoming an important industry in this state.

Respectfully dedicated to the Nebraska State Agricultural Society by the author,

WALTER E. WELLMAN,
of Sutton, Clay county, Neb.

WOOL GROWING.

Although most people can readily distinguish the difference between ordinary wool and hair, it is not easy to give a satisfactory definition of the former in consequence of its occasional resemblance

to the latter. Some of the coarser sorts of wool approach so near to hair, while the finer hair, found next to the skin of some animals, has so much the appearance of wool, that the difference between the two is sometimes very insignificant. It is only upon minute inspection and comparison that the real difference in the two animal excresences becomes unmistakable. While hair presents a continuously smooth surface from end to end, wool, on the contrary, reveals, under microscopic examination, an irregular and very rough exterior, caused by a number of scales, fitting, sheath-like, one over the other like the tail of a rattlesnake. This uneven nature of wool fibre imparts to it its great commercial value, enabling it to keep the "turn," or twist, in spinning, thus admirably adapting it for the production of the numerous articles classed as woolen, from the simple spotless toga of the Bedouins, of Arabia, to the superfine black found in the brilliantly lighted saloons of the aristocrat.

If time honored associations and great antiquity can impart a dignity to a calling, then wool growing must be considered one of the most honorable avocations. Artistic remains, found in the depths of ruined Pompeii, as well as hieroglyphics traced on the pyramids and obelisks of ancient Egypt, tell us of the manipulation of, and traffic in wool long enough before the epoch of broad cloth or half hose. Anterior to that time when a shepherd boy became the sweet psalm singer of Israel, or the faithful Jacob tended the flocks of the faithless Laban.

In considering the subject of wool growing two very important questions naturally suggest themselves to the mind for solution, namely: What is the best kind of wool to grow, and, how is it to be grown with the greatest advantage to the flock master? In ascertaining what class of wool is most likely to repay the expense of growing, we have simply to keep in mind the qualities absolutely necessary to constitute good wool, and procure the animal that furnishes the desideratum.

GOOD WOOL

should be soft, fine, and long, as any serious departure from these requirements deteriorates from the value of the fleece. Great as

the importance of weight undoubtedly is, when the grower wishes to convert his wool into cash, length of fleece must not be solely relied upon to effect that object, for mere length of fleece, if accompanied with corresponding coarseness of fibre, will diminish the market value af the wool. The buyer looks for fineness and softness, while the seller's attention is devoted to the weight, and as it is clear that the latter must not interfere with the fineness, it follows that "closeness of the growing wool" is the only legitimate method whereby the grower can expect to realize his profit, without loss to the quality of the fleece, or clashing in any way with the interests of the purchaser, and the animal that grows the wool close must of all

BREEDS

be preferred by any one who wishes to devote himself to wool culture with expectation of success. There appears to be a general agreement among wool growers, that the Merino is, under skillful management, the best adapted for the production of marketable wool, and will well repay any trouble or outlay incurred on their behalf. Neglect on this head by flock masters is a fruitful source of loss to the wool growing community generally. There is reason to believe that in consequence of the inadequate

SHELTER

provided for sheep in most farm yards, every winter and early spring time produce a mortality among the flocks truly alarming if reliable statistics could be furnished. If tender lambs, or sheep just after shearing, are exposed to cold east winds it can scarcely be a matter of surprise if losses should ensue, and the more variable the climate, the greater should be the care of those having the charge of flocks, to provide necessary shelter against the inclemency of the weather. Where the situation of a sheep run is naturally sheltered, of course less care is requisite on the part of the flock master, but where the situation is exposed resort must be had to counteracting influences in order to compensate, as much as possible, for the loss of a mild climate where wool especially creates.

THE SOIL

on which sheep best thrive, though seemingly an insignificant item, is one that influences the wool return to a very great extent. A moderately moist soil appears to be the best adapted for wool growing, such as is to be found around the sea coast. Inland tracts of land, very far removed from the sea, are said not to be so well adapted for the production of good wool. A light, chalky soil is to be preferred to a dark sod as the latter is apt to impart a dark shade to the wool and thus preclude the possibility of its being manufactured into light or bright colors.

The sheep, like most other animals, is keenly alive to the advantages of good

FOOD,

and this indispensable requisite will repay the attention of the owner of flocks. Some idea of the importance of good pasture may be gained by contemplation of the fact that in New Zealand, where wool has of late years been cultivated with very great success, the yield has been considerably increased through the introduction of English grass, in some cases as much as doubling the clip of former years, and still greater results are expected to follow. In view of this fact, how very important it becomes for pioneer herdsmen to provide a plentiful supply of good pasture, instead of trusting, as is too often the case, to the lank, lean grass spontaneously yielded by nature. The tall, slender outgrowths of maiden soil are very apt to impart their own peculiar quality to the animals which consume them, at the expense of stamina, and however we may admire a racer for length of leg and general slimness of outline, such qualities are by no means desirable in a sheep.

In connection with

BREEDING

it must be remembered that the sire always determines the quality of the wool of the progeny, therefore it is of the utmost importance that the ram should be "well up to the mark," otherwise, in

reproduction, any good points possessed by the ewe, will be almost thrown away. It is a fact worthy of note that a ram under the influence of good food and proper shelter will improve quicker than a ewe similarly placed, and imparts that improvement to the lambs sooner than the dam does. A fine wool ram and a coarse wool ewe will produce lambs with wool *three-fourths* as fine as the sire, while a coarse wool ram and a fine wool ewe, will produce lambs with wool only one-fourth as fine as the sire!

FINE WOOL RAMS,

then, are indispensable, if the quality of the wool is to be maintained. As considerable difference of opinion may exist respecting the various breeds, a condensed extract on this point, from the Encyclopedia Britannica may not be uninteresting, as showing the comparative wool producing powers of the different breeds.

"An average of the finest wool yielded by the Spanish ewe is $\frac{1}{1370}$ of an inch in diameter, while the native Merino ram yields wool $\frac{1}{1234}$ of an inch, the English Southdown and Wilts ewe giving an average respectively of $\frac{1}{1110}$ and $\frac{1}{806}$. As the finest wool is $\frac{1}{1500}$ of an inch in diameter, and the coarsest $\frac{1}{450}$, thevast superiority of the Merino sheep as a wool producer is at once apparent. It must be remembered that, in addition to fineness and softness of fiber, smoothness and regularity are necessary in order to constitute best wool, such as is furnished by the Merino. If softness alone constituted good wool, then Saxony would rank next to India, which enjoys a world-wide celebrity on account of the softness of its wool, excelling to such an extent as to defy all competition in the production of fabrics in which exquisite texture, brilliancy of color, and beauty of design are conspicuous.

THE EFFECTS OF CLIMATE

are nowhere more strikingly illustrated than in the assertion that the original stock from which the Merino sprung, inhabited the inhospitable snows of Siberia, and that their covering was hair! If, therefore, the stunted, hairy denizens of the frigid zone can be,

by removal to a genial climate, developed by care and proper food into fine wool producers, then it seems to follow as a matter of course, that the exposure and neglect of good breeds is very likely to cause them to degenerate to such an extent as to become, in time, compartively useless as wool producers. Excessive heat or cold seems to impair the quality of the wool. The biting winds and drifting snow of the frigid zone are not more injurious to sheep than the heat of the tropics; therefore, it is not surprising to find that by far the best wool is grown within the temperate zones, and the majority of it in the north, for it is only within a very limited period that Australia and New Zealand have contributed to the wool markets of the world, although the success attained by wool growers in that part of the globe warrants the belief that at no distant day the exports from those British colonies will be something extraordinary. As a wool producer Victoria stands first of British colonies; New South Wales ranks second, and New Zealand third. Remembering the tender years of the latter, although she stands third as a wool producer among the southern islands, she has no reason to be ashamed of her capabilities in wool growing. In 1853, New Zealand raised 1,076,340 pounds of wool, at the estimated value of $332,535, while in 1872 there was raised 41,886,997 pounds, valued at $12,689,595. Thus, in nineteen years there was an increase of 40,815,657 pounds, being, in round numbers an annual increase of 2,148,192 pounds. That this enormous increase in the yield of New Zealand wool is due, in great measure, to improved pasturage will be readily admitted when it is remembered that the first fruits of an introduction of foreign grass to replace the natural outgrowth of the soil, was a double yield of wool, with prospect of a yet greater increase in the future.

SHEARING AND WASHING

are processes which demand attention only after the growing is finished, and, something like the ingathering and storing of fruit, can be accomplished with comparative ease, after full growth is attained. As each apple and each peach is removed from the tree and carefully stored, so, every shearer will let his clip remove

every vestige of wool, and take care to keep it clean. Sheep washing should be, if possible, done in a running stream, and shearing should not be done during severe weather.

SHEEP-RAISING AND WOOL-GROWING IN NEBRASKA.

BY GEO. H. SIMMONS.

Nebraska, although one of the youngest states in the Union, is to-day second to none as an agricultural state. With her broad, well watered acres, loaded with sweet, nutritious grasses, she stands pre eminently the state for wool-growing and stock-raising. Within her borders she has from 20,000 to 50,000 square miles of rich prairie, adapted to stock-raising and agricultural pursuits, only waiting for enterprising man to come and possess it.

In these lands lie latent the means to supply fifty millions of people with food and clothing. Although we do not expect to see this multitude in our day, yet it does not take a very great stretch of the imagination to see this number in the coming century. If immigration continues to increase here as it has done during the past five years, we shall soon have a population as dense as that of Massachusetts. But as we have not this population now, and yet have the means to support it, it is our privilege to contribute towards the support of the people of other states and countries less favored; and we have every facility for so doing. We can not only supply them with all the varieties of food, but we can give them the materials for clothing by raising wool and manufacturing it into woolen goods. We have railroads traversing all parts of the state, giving us every facility for transportation.

CLIMATE.

In a country so far from either ocean we must expect extremes of both heat and cold. Yet the steady breezes that continually

blow during the summer relieve the former, and the dry atmosphere takes away the severity of the latter.

The average annual temperature for ten years we find to be 51°; for the hottest month (July) the average was 81°; for the coldest month (January), 21°. Averaging the hottest day in each year, for ten years, we find it to be 98°; the average coldest day for the same length of time is 14° below zero.

The atmosphere is dry and bracing, and free from fogs. Our heaviest rains are generally about the end of May and the first two or three weeks in June. The summer and autumn are characterized by little rain, and the winter months by almost none at all. We have but little snow, and that is dry, dropping off the animals before it thaws. Continuous rains are severe on sheep, especially if the rain is cold. Here we are free from this trouble, yet have all the rain we need.

SOIL.

The soil of Nebraska is a dark, rich loam, containing all the elements of plant growth. According to Prof. Aughey's analysis, it forms one of the richest and most tillable soils in the world. In its chemical properties and formation it comes nearest to the valleys of the Nile and the Rhine. Its richness is almost inexhaustible, and extends deeper than can ever be utilized by any farm implement. It is free from stones and stumps, or any other obstruction that troubles the husbandman in many of the eastern states. Owing to the finely comminuted silica, of which the bulk of the soil consists, it possesses natural drainage in the highest degree. However great the floods of water that fall, it soon percolates through this soil, which in its lowest depths retains it like a huge sponge. When drouths come the moisture is drawn up by capillary attraction from below, supplying what might otherwise be a parched vegetation with plenty of moisture, even in the driest season. All the cereals grow well here, and Nebraska is destined to become one of the leading grain-producing states of the Union. It is well adapted to all the grasses, especially blue grass, red top, white clover, and Hungarian grass.

ADAPTATION OF NEBRASKA FOR SHEEP-RAISING.

The question now arises, is Nebraska adapted for sheep-raising and wool-growing? We answer, *emphatically*, yes! There is not a state in the Union, taking everything into consideration, that is better adapted for this branch of husbandry. For this purpose the climate is unsurpassed. Although we have severe storms occasionally, yet they are few and far between. The humidity of the atmosphere and the absence of fogs are redeeming features in our climate.

SOIL PRODUCT.

There is not a thing needed for the sheep that we cannot produce. We have raised so much corn that we have been able (?) to sell it at fifteen cents a bushel, when, had it been put into mutton and wool, it would have brought fifty cents.

We can raise all the cereals—flax for oil cake, and, if necessary, tobacco to kill the ticks. There are millions of acres of land lying idle in Nebraska, well adapted to the development of the sheep, and producing large crops.

DISEASE.

Our sheep are almost unaffected with disease. Being free from wet or marshy soils, they are not troubled with that most troublesome of all diseases, the foot rot. Ticks are not as troublesome as in the east, and the scab is seldom heard of. Many have brought sheep here affected with the foot rot, and with the scab, yet the sheep have overcome both; whereas, in the eastern states this would be thought to be an impossibility.

WILL IT PAY?

Nebraska being almost entirely an agricultural state, her products are necessarily very bulky and heavy, involving heavy expense of transportation. Added to this, our state being nearly in the center of the Union, we are the farthest from an export mar-

ket of any state, thus compelling us to pay more for transportation, or consume our products at home. It is of vast importance to the state at large whether we continue to sell our corn at fifteen cents per bushel, "raw," or so use it that it may bring two or three times that amount. She depends entirely on her farm products for her prosperity.

Our farmers, a majority of them at least, raise and sell the products that are most bulky, and consequently costing most for transportation, viz.: wheat, corn, oats, potatoes, etc. It frequently takes one or two bushels of wheat to carry the third to the seaboard, and five or six bushels of corn to carry one to New York. These facts have been before the western farmers for many years, yet they act as though they knew them not. How long will these men work twelve to fifteen hours a day to support the railroad corporations, while they laugh in their sleeves at the folly of the farmer?

How is the producer to avoid giving these corporations his hard-earned profits? By feeding his products to that for which there is a ready market, and which will cost least for transportation. For this, mutton and wool-growing offer the most flattering inducements of any branch of agricultural husbandry.

In all ages the sheep has been the highest representative of rural husbandry. From the time of its first shepherd, Abel, it has given its coat to clothe, and its flesh to feed. It has been a standard of exchange for the ancients, and a sign of prosperity to its owner. What it has been in the past it is to-day.

"Small profits and quick returns," is a motto which, if changed to "large profits and quick returns," would apply admirably to sheep and wool-growing. A man does not have to wait three or four years before he gets his first returns, but after the first year he begins to receive pay for his labor and capital invested.

Wool, comparatively, requires less to transport it than any commodity raised by the farmer. If he lives a long distance from a railroad, it will be of vast difference to him whether he raises something that requires little labor and capital to transport it, or not. He can haul twelve hundred to two thousand dollars worth

of wool with a span of horses at one time, while it would be a good six months' work to haul corn to amount to that sum, with the same force. This is an important item to him who lives at a distance from a railroad, or who is taking his all to start a home on the frontier, in advance of civilization.

S. P. Boardman, Lincoln, Logan Co., Illinois, says: "Less than two cents will carry fifty cents worth of wool to market; to carry fifty cents worth of corn costs three dollars. In my own case I could haul the corn I feed to my sheep in the winter, six miles to the railroad, and I could also haul the wool to New York in less time than I could haul the corn I feed to my sheep in the winter, six miles to the railroad, and I could also haul the wool to New York cheaper than I could ship the corn by rail." F. B. Grinnell, of Grinnell, Iowa, says: "At any point two hundred miles from Chicago, this ratio of cost in freighting is well established: that to transport your products to the seaboard, on wheat you pay 80 per cent, on pork 30 per cent, *gross on wool 4 per cent.* This is not conjecture, but my own experience, that I give 80 per cent of the value of my wheat, which impoverishes my farm, to find a market, and 4 per cent to find the best wool market, the production of which enriches my acres beyond computation."

Beef and pork raising have brought fair returns, and the husbandman is sure of getting a good market at fair prices for his grain, if used in this manner, but cattle and pigs produce only meat, as food for man, while the sheep not only feeds but clothes him. Throw aside all calculations of wool, there is as much profit on mutton as on beef or pork. Yet we calculate wool to be the most important product of the sheep.

The sheep is the only animal but that may die in debt to the owner. If an ox or hog should die, it is a total loss, with the exception of the hide which will about pay for the skinning. Not so with the sheep. If it should die at birth, it has cost nothing; if it should die in six months the hide and wool will pay for all it has eaten and cost. At the first shearing it more than pays its cost, and the owner is then and ever after in debt to it. As year by year goes on, this indebtedness increases to the day of its death.

That successful, practical, English farmer, Mechi, says that beef must sell twenty per cent higher than mutton to make them of equal profit. And in our western country, it is claimed by observing farmers, that mutton can be produced at a little more than half what it costs to produce pork.

Local causes will not affect the price of wool to any extent, or for a long time. Beef and pork depend, to a certain degree, on a local market, while wool depends on the markets of the world. For thirty years preceding the war the average price of medium wool was 42.8 cents per pound, for fine wool 50.3. It varied but little during this time, the lowest price paid for medium wool during these thirty-five years being 30 cents.

One of the great advantages we possess over our eastern competitors is the large amount and cheapness of our land, and, as a necessary result, the cheapness of our fodder and cereals. In advance of civilization there are millions of acres of land that can be had for almost nothing, or which can be used for grazing purposes free. A little nearer home we have government and railroad land worth from $1.25 an acre and upwards. Even in our thickly settled communities there are thousands of acres of land, held by non-residents, that may be used for comparatively nothing. Good, well-improved farms can often be bought in our best neighborhoods for $20 an acre.

LABOR.

Another inducement for sheep raising is found in the want of labor. "What profitable enterprise requires the least labor?" is a question often asked when the "hired man" of to-day is the landowner of to-morrow. Wool growing is one. The dairy not only enslaves the out-door laborer, but also that of the household. In pork raising the pigs require feeding morning, noon, and night. Grain raising requires much time and muscle, and, besides, impoverishes the soil. But not so with the sheep. They will roam over the prairie for months in the summer requiring only a boy to herd, while one man will attend to a thousand in the winter. The girls and boys of the family will consider it a privilege to take

care of the weak and orphan lambs. The hay may be stacked by machinery, by which two men can put up enough for two thousand sheep.

REQUIRES LITTLE CAPITAL.

It is an enterprise for the poor man. One is not obliged to invest large sums before he can become a successful sheep raiser. If he only invests one hundred dollars in a few good ewes and a buck, he has made a start. He does not require extensive or costly barns, but only an even temper and a disposition to treat his flock well and kindly.

If one has eighty acres of land and the money to buy another eighty it will be far more profitable to invest the money in a flock of sheep and let the "eighty" go.

There are none poorer in the west than those who have large farms to pay taxes on, and no stock, unless it be those who have the greater affliction of having it "broke," and are obliged to sell their grain in the raw state.

PROFITS.

We now come to the most utilitarian part of our discussion—the profits. The experience, figures, and estimates of nearly all the practical sheep raisers in this and other states, which I have seen, all prove the same thing, viz.: that mutton and wool growing *pays*.

If sheep will thrive on three per cent of their weight, daily, and will produce meat that is worth more in the market than pork or beef; if they are more prolific, fat quicker and easier, and make quicker returns than other cattle; if their manure is better and of more value than other animals; if they produce fleeces weighing five pounds on the average, and with a ready market at an average of 45 cents; if they require less labor, and will eat a greater variety of herbs than other stock, then it must be evident that there is profit in the enterprise.

The proximate profits of a flock of sheep—say 500—may be

represented by the following figures. A much larger flock, with one man to take care of it, or a less number herded with other cattle, could be kept for a less amount:

The estimate for 500 sheep is:

70 tons of hay @ $2.50	$175.00	
200 bushels of corn @ 25c	50.00	
Salt	10.00	
Incidentals	25.00	
Shepherd one year	250.00	
Washing and shearing	40.00	
	$550.00	
500 fleeces averaging 4½ lbs., @ 40 cents		$900.00
200 lambs @ $1.50 each		300.00
		$1200.00
		550.00
		$650.00
Losses		50.00
Total profit on capital invested		$ 600.00
Capital invested, outside of land and buildings—500 sheep @ $8		1500.00

The following is a statement published by the Hon. Moses Stocking, of Wahoo, Saunders county:

Capital invested July 1, 1873, 1664 sheep @ $3 ..... $4,992.00

EXPENSES.

160 tons of hay @ $1.50	$ 240 00
1500 bushels of corn at 50c	750.00
12 months' labor caring for sheep	246.00
Shearing 1,652 sheep	165.20
Losses	118.00

Expenses hauling, etc	49.17
12 barrels of salt	26.00
10 per cent interest on capital	499.20
Cost of 304 sheep sold	912.00
	3005.57

RECEIPTS.

304 sheep sold	$ 918.75	
351 lambs raised	702.00	
11,600 lbs. of wool raised @ 30c	3480.00	
		5100.75
Profits		$2095.18

This is over 50 per cent interest on capital invested! Mr. Stocking has calculated corn at 50 cents, which is *double* the average price during the last five years. He has estimated his hay at $1.50, which is generally supposed to be the cost of curing and stocking. My estimate is what it can be generally bought for in the stack—$2.50.

According to the table of Dr. Randall, in his "Practical Shepherd," the average price for wool for 35 years preceding the high prices of the war was 42 and eight-tenths cents per pound. Allowing each fleece to average five pounds would give us $2.14 per fleece, which would pay the cost of keeping anywhere, and leave the owner the lambs and manure for his profit. But in Nebraska, where sheep can be kept fully one-half cheaper than in the eastern states, it will be safe to calculate as profits one half the fleece, in addition to the lambs and manure.

Aside from the value of the land, it is claimed by those who have tried it that it costs nearly one half less to raise sheep here than in the east. Dr. Randall claims a greater difference than this, putting the cost in the eastern states at more than *two* dollars, and in the west at *less* than *one* dollar.

MUTTON DEMAND.

We do not claim for the Nebraska shepherd as good demand for his mutton as has his eastern competitor. But there is a demand as yet equal to the supply at good fair prices. Mutton is becoming in greater demand every year, as its healthfulness is appreciated. In England, where "roast-beef" and a good dinner are synonymous terms, statistics prove that more mutton is used than beef—not because it is cheaper, for it is not. During a period of 20 years—1854 to 1874—the average price of beef in England has been 11 cents, while mutton has averaged 13 cents. In the United States the consumption and price of mutton have advanced rapidly. In the eastern market the quotation of *good* mutton is one to two cents higher than beef. There is a constantly increasing demand, which will require an increasing production to supply.

The price of lamb is still higher; the production of which, near cities, would be a profitable branch of sheep husbandry.

Double-decked sheep cars, carrying two hundred, can be had for a little over $100 from Nebraska to Chicago, thus putting down one fat sheep at a little over 50 cents each. Dressed mutton can be shipped to New York for a cent and a quarter per pound.

WOOL DEMAND.

According to published official statistics the United States consumes more foreign wool than of her own production! And this in a country as well adapted, if not better, to wool-growing as Australia, England, South America, or any other country from which she imports. It is not because we are not able to compete with foreign producers. There is no reason why Nebraska cannot produce wool as cheap as Australia. Our land is as cheap, wild grasses are better, labor is as cheap, and our breeds of sheep fully as good. Yet they can ship here, and then have a ready market at paying prices.

Few persons are aware of the immense amount of wool required to clothe the 40,000,000 of the United States. It is estimated, according to official reports, that it takes five pounds of wool for each person annually—200,000,000 pounds! We can hardly estimate four pounds to the fleece, taking the country through; yet calling it that, we require 50,000,000 wool-bearing animals to supply the demand, against which we have 34,000,000. We imported in 1872 122,256,499 pounds of wool valued at $26,214,195; and in 1873 90,000,000 pounds, valued at $22,000,000.

But let us look at our own state. The population at the last census—1870—was about 130,000. We consumed over 600,000 pounds of wool, manufactured in various ways, and produced 75,000 pounds.

This was five or six years ago, as late as I can find reliable statistics. Perhaps we could make a better showing now; but we, undoubtedly, do not produce one quarter the amount we use. And this in Nebraska, one of the best, if not *the* best, of the wool-growing states in the Union! No wonder we cry "hard times!" It behooves us, as political economists, to "think on these things."

FUTURE DEMAND.

It needs but a glance at wool-growing and manufacturing during the last generation, its extended use in ever multiplying fabrics of clothing and carpeting, its undiminished demand, to prove that as population increases and civilization advances the consumption will be largely increased, and the markets of the world long remain unglutted.

In 1860 there were consumed in woolen goods from our own and foreign looms, at a fair estimate, five pounds of wool to each individual, or 150,000,000 pounds in round numbers. What will be the requirements for thirty years hence? In 1860 the population was nearly 32,000,000. The increase has been quite uniformly about three per cent per annum, doubling once in every twenty-three years. Say that it doubles once in thirty, at two and a half

per cent—in 1890 the population will be 64,000,000, requiring 320,000,000 pounds of wool. Allowing to each fleece an average of four pounds, there would be required 80,000,000 fleeces yearly to supply the demand before we could spare any for transportation.*

But we should not rest contented with supplying the home demand, but strive to compete on the foreign market. In France, Germany, Spain, and Prussia the production is falling off, while England and Australia are doing their best.

WOOLEN MANUFACTURES.

One of the great wants of our state to-day is more manufacturing. We need such men as Lord Bacon, who said: "Let us advance the native commodities of our own country, and *employ our own countrymen before strangers.*" * * * "Let us turn the wools of our land into clothes and stuffs of our own growth." Nebraska offers every inducement to the capitalist to invest his money in the manufacture of woolen goods.

We have splendid water-power sites all over the state, and enough raw material to run a dozen mills; and yet we have not a mill in the state. Enterprising business men could secure a monopoly of the business, and a fortune besides. There is no reason why we should pay to ship our wool east to have it manufactured, then pay the eastern capitalist to manufacture it, and pay the railroad monopolies again to bring it back to us. If we had factories here we could make our own clothing and woolen goods far cheaper than we now get them; we could give employment to thousands of men; we could put wealth into the coffers of the state; we would do away with hard times; we should hear the pleasant hum of business all around us; we should have a demand for our wool, cheap clothes, and prosperity reigning supreme. Let us have them and be independent of the world—for our clothes at least.

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*These figures I take from the U. S. Reports.

"But how are we to get them?" many may ask. Produce more wool and we will get them. We have enough wool to run many factories already, but capitalists have not confidence enough in the supply to start. The secret of it is, our wool-growers are *scattered* all over the state; a large majority of the sheep being in the frontier counties. We don't make *show* enough. Let us go into it as though we meant business—raise the wool; the mills will soon follow.

What advantage has Iowa over us for sheep-raising and wool manufacturing? None at all. Yet she produced in 1870 two million pounds of wool more than we; and had eighty-five woolen mills, while we had none. Surely there is no reason for this. It is certainly a false system of political economy in a state with so much land, having such vast resources of annual growth running to waste, to send abroad for the raw materials of manufacture; and it is not less unwise for a state with such a population as Nebraska has, demanding various employments, to send away these unwrought productions, which she is amply able to manufacture for the markets of the world.

BREEDS OF SHEEP.

On this topic I shall be as brief as possible, confining my remarks to those kinds that are likely to succeed here; that are best adapted to the wants of the Nebraska shepherd. First on the list, being the most popular, are the

MERINOS.

Originally from Spain, the merino has been steadily improved until he has become the one sought after by those wishing to raise fine wool. He was introduced into England many years ago, but after several trials was abandoned, mainly because his mutton qualities were deficient. In his native country the merino had to lead a nomadic life, traveling continually. A flock would be sep-

arate from all others for ages, breeding "in and in," giving no chance for improvement. It is a wonder how they were kept up to such a standard, unless it be attributed to the splendid pastures.

The carcass of the merino is not remarkable for fineness of form or beauty, but, if anything, the reverse. They are small boned, rather compactly built, and of medium size. Their shoulders and chests are small, lacking that which goes to make a perfect sheep. Their flesh is sweet and rich, yet wanting that delicious taste peculiar to the South Down. But it is the wool of the Merino that attracts to him so large a number of admirers. He is characterized by an abundance and fineness of fleece; well held together; with good felting properties and a large amount of yolk, which distinguishes it from all others by the peculiar softness it gives to it. The wool grows thick, protecting the animal from storms. The Merinos are healthy, of strong constitution, capable of enduring much hardship, and are the longest-lived of any breed. They are domestic in their habits, hard workers, preferring to browse on the tops of mountains rather than in the rich valleys. They endure the extremes of temperature better than any breed of value, proving profitable anywhere in the temperate latitude.

FRENCH MERINOS.

The French Merino is a larger breed than the Spanish, and has proved to be profitable where the climate is not too severe. But for our prairies I think he will never become popular. He has been pampered to a high degree for many years, and is not fit to turn on our prairies and shift for himself. Yet he has been recommended as producing excellent mutton and a wool-bearing animal combined, when crossed with the Spanish. Even then the offspring lacks that hardiness necessary for profitable breeding.

DOWNS.

There is only one breed of the Downs likely to prove successful here, viz.: the South Downs.

SOUTH DOWNS.

This breed was regarded with very little favor in England until the last quarter of a century, when it began to receive more notice, and is now bred to as great extent as any other breed. It is hardy, yielding a fair quality and quantity of wool, and furnishes mutton of most excellent flavor. To its mutton qualities may be attributed its rapid rise to favoritism in England. Added to this, they mature very early. They are generally ready for the butcher at from eight to ten months old, and at two years are in their prime.

They are hornless, dark faced and dark legged, with a well proportioned and solid body. The quality of the wool is nearly equal to that of the Merino, and produces nearly as much. Contrary to the Merino, however, they are short-lived, as are all the highly improved English breeds. They lack some of the good qualities of the Merinos, yet they can be profitably raised in this state.

LONG WOOLS.

Of the long-wooled breeds there are many varieties, taking their names principally from the locality in England where they were bred. Thus there are the Lincolns from Lincolnshire, the Cotswolds from the Cotswold hills, the Leicesters from Leicestershire, Kents, Bramptons, Exmoors, etc. All the different varieties probably came from a single breed, but gradually changed, by reason of soil, climate, etc., peculiar to the locality where they were. Probably the only variety among the long-wools that would suit our soil and climate is the Cotswold. The Leicesters might come next, but I hardly feel like recommending them, although I know of no good reason why they should not succeed here.

COTSWOLDS.

The Cotswolds were introduced into the United States about 1840. In that year, according to Dr. Randall, the Hon. Erastus

Corning, of Albany, New York, and W. H. Sotham, of Jefferson county, New York, imported twenty-five sheep, bred by Mr. Wm. Hewes, of Northleach, Gloucestershire, England. The same gentlemen imported later the same year fifty ewes, in lamb, from Mr. Hewes, and twenty-five from Mr. Wm. Cotter, of Middle Aston, near Northleach. From these flocks came most of the sheep we now have.

Quite a large number, however, have been sent into this country by Mr. F. W. Stone, of Moreton Lodge, Guelph, Canada West. These probably were from the same flocks as Corning's and Sotham's, Mr. Stone having imported his sheep from the same neighborhood.

The Cotswolds are great favorites where their qualities are well-known. They are large, well proportioned, produce a large amount of mutton, heavy fleeces, are very prolific, and are good nurses. It is often that they have twins, and not at all remarkable for them to bear triplets. They mature early, being ready for the butcher at fifteen months, and weigh at that age 75 to 100 lbs. Their wool is white, from seven to ten inches long, and weighs from six to ten pounds to the fleece. The mutton is excellent, yet not quite equal to that of the Southdown. They are the hardiest of the long wools, and, with a little care, would stand the climate of Nebraska well.

I have purposely omitted to speak of other breeds, deeming these sufficient. To those wishing a more extensive discussion, I can do no better that refer them to the "Practical Shepherd," an excellent book, written by Henry S. Randall, LL.D.

I have no hesitation in saying that any of the above breeds will succeed here, others may. Many, however, will prefer Merinos, yet each has his own favorite breed. But no matter what the kind, get none but the best. Blood always has and always will tell, and, although it may cost more at first to get the best pure blood, yet in the long run it will pay.

No more breeding ewes should be bought than can be economically used. When a man has over-stocked himself, he will become disgusted with the extra care, and finally quit the business in disgust; they say it does not pay. And no wonder! If there is need

of a full flock at once, procure wethers to sell off, and the lambs will take their places the following year.

Before selecting a flock, first decide how many are wanted, and the kind. If mutton is desired select those that are likely to make the most profitable mutton producers. Get those that are well made, that have the frame to put the mutton on, and the constitution to assist in the operation; then, if they are not up to the standard, use judgment in breeding, and if there is a chance for improvement—and where is there not?—it will soon be seen.

But mutton will be the secondary object in Nebraska for some years yet. Now, wool is what we need, especially at a distance from a city, and where there is no market for mutton. For this purpose procure sheep easy to keep, with a good fleece, and a carcass of fair size, with such wool as the buyer will be glad to get. Before crossing be sure it will benefit the offspring, not detract from what they now are. There is an art in breeding, and one in which few are perfect. It is not everyone that can be a Bakewell, an Ellman, a Jarviss, or a Lane. Yet all can improve their flocks by a little care.

WINTER MANAGEMENT.

Shelter in Northern climates is indispensable to profitable sheep raising, and in every latitude north of the Gulf of Mexico would be advantageous. There is policy as well as humanity in the practice. An animal eats much less, is more thrifty, less liable to disease, and his manure is richer and more abundant. The prairies are very extensive, and the cold winds of winter sometimes sweep over them unmercifully. It is not every farmer who is able to purchase lumber, etc., for extensive sheep barns. Having paid for his land and necessary improvement and bought his flock, he finds the state of his finances will hardly allow him to make extensive outlays in this direction. And it is unnecessary to do so. Comfortable sheds can be made from poles and hay, or "slough-grass," which will answer every purpose. The poles can be cut on any of the streams, and the grass on the "Great American Desert."

The sheds should be open at the south, made six to eight feet high, length and width to suit. Half racks should be placed at convenient places around the shed, allowing a foot, at least, to each animal.

When convenient divide the flock into lots of 75 to 100 each, and keep in separate yards. Breeding ewes might make one lot, wethers another, and the lambs and weak ewes another. Take care to have racks enough, not only to feed grain, but hay also. Sheep proverbially are very clean in their habits and will not eat half so well, or as heartily, from the ground as from racks and troughs.

FOOD.

Sheep, like man, like a change of food, and it is a part of good management to provide for their epicurean tastes. There is very little grows on our western farms but will go to make the sum total of the provender for sheep.

Our nutritious prairie grasses will keep them through at least six months of the year, but we ought not to depend upon them for a longer time than that, unless in the southern part of the state. It is a bad plan to keep sheep out on the prairie after the grass is killed by the frost, unless they are fed at the sheds besides. They lose flesh when they most need to be in good condition.

When taking the flock in in the fall take care not to feed too highly at first. As the grass becomes scarce or worthless, feed the sheep a few ears of corn daily, increasing slowly until they have their regular allowance.

Corn is the best and cheapest of the cereals that can be raised for the sheep, and is the best wool producer. One man with a good team can easily attend to fifty acres, which will bring twenty-five hundred bushels, at a fair estimate, and enough to keep a thousand to fifteen hundred sheep.

Oats yield well, and make excellent food for the lambs through the fall and winter. The sheep will relish the straw, if well secured, as a change from hay.

Prairie hay should be all cut before the frost touches it. Save ten to fifteen tons to each one hundred sheep. This is more than they will eat generally, but it is best to save enough, it costs but little.

All the tame grasses do well here, and will be found valuable winter food, when used as a change.

In regulating the *quantity* to be fed, one must judge by observation. Never feed more grain than they will eat up clean. Each sheep ought to be allowed two to three bushels of corn for the winter, when fed no other grain. Some use more, many less; but this will be found sufficient. Corn fodder should be cut before the frost sets in, putting it in shocks of about sixteen hills each. This may constitute the noon meal; it will be found a very cheap food, which, if the corn is unhusked, will be equal to a half pint of corn a day for each sheep. It is a good preventive of costiveness, and gives a full return in the increased weight of the fleece

The grain should be stacked near the sheep yards, so that the straw may be either in or near the pens, helping to protect the sheep. Let them have all the straw possible, so that they may eat what they want and have good beds, besides making the straw into manure.

Straw used thus will realize to the farmer at least two dollars a ton, and in no other way can he use it so profitably.

When one is beginning, if he has no money to invest in grain, he will find sheep will winter pretty well on hay alone, if they have good shelter. I would not recommend such a plan, but it is one that might be adopted in case of necessity.

Feed salt once or twice a week, say one to two quarts for one hundred sheep. It is very neccssary that the sheep be fed the same time every day.

It would seem that if a man had one or two thousand to attend to they would be fed regularly. If, however, he has his sheep in four or five yards he may be very irregular in his feeding, by giving a flock their feed first one day, and last the next. The yards should be attended to in the same order every day.

Water is as necessary in winter, when feeding dry food, as in the summer. They should have water in the corrall to run to, for if they have to be driven to the water very often half will go back without drinking.

It will be found unnecessary to keep the sheep penned up except in stormy weather. Let them run through the grain field in the fall, and through the corn field after the corn is husked.

COUPLING SEASON.

Before putting the buck with the ewes, see that they are in good condition. If they are falling off at this season they will not take as soon as if they were in good condition. They will not come on as fast; many will miss, and so take much longer to serve the flock, making it very inconvenient in the lambing season.

The buck should be turned in from the middle of November to the middle of December, bringing the lambs from the middle of April to the middle of May. If the lambs are to drop on the range they should not come before the last named date.

The common but very poor way of using the ram is "turn in." Used thus he should not be allowed more than thirty-five or forty ewes, and even then it will injure him more than if his powers were used to advantage with a hundred and fifty.

A very economical plan of using the buck is by means of the "teaser." This is a very excellent way, where fine breeding is indulged in, but as few will follow this plan I will not take the space to describe it.

The plan which I prefer, if the buck is to serve the ewes indiscriminately, is to put into the yard every morning about ten to twenty-five ewes—commencing with a few at first. The ram is marked with lamp-black or venetian lead—mixed with lard—before the fore legs and under the belly, but back far enough so that it will not rub off by rubbing against the ewes. He is then turned into the yard and serves the few that may be among them.

The shepherd goes round three or four times a day and takes out those that are marked. The next day he puts others in, and so on until all are served. The buck may then be put with the whole flock (having been marked with a different color) to find any that may have "turned." By this plan a healthy buck can serve one hundred and fifty ewes without hurting himself or the ewes.

Better get a few *good* bucks, and use them in this manner, than many and used in the common way. One ram worth $100, used as above, is far better than five poor ones used in the old-fashioned manner. And what a difference in the offspring! If one has a poor lot of ewes, but a good ram, he may soon have a good flock; but if the ewes are good and the ram poor, never.

In selecting a good buck the purchaser should use his own judgment. S. P. Boardman, of Illinois, thus describes what he considers to be a perfect Merino buck: "A Spanish Merino buck should be short legged, heavy bodied, pony made; the head well up, with a pleasant countenance; short faced, wide horned, with some folds about the neck; broad in front, full behind the shoulder, showing no wethers, ribbed out round, deep in the chest, well let down in the hock, square behind, full in between the hind legs when viewed from behind, and having a wide, flat tail." This may do for shape, for nearly all kinds. But there are other things to be considered.

If wool is sought, then that must be examined, wheher fine or coarse. The whole body should be covered with wool of even quality and fineness, except below the hocks and knees—where it would only collect mud and filth—and part of the face. It should come over the back of the neck in an unbroken mass, extending over the head down the face one or two inches, ending in a bunch. It should be thick on the cheek, reaching a line drawn from the eye to the mouth. He should have a free, open countenance, not sheepish.

SUMMER MANAGEMENT.

As soon as spring opens the sheep will begin to bleat for the

little blades of grass that may be seen springing up on the prairie. Eastern writers tell us not to put them on this until it has a thorough start. This may do east, where there is a limit to pasture, but here, where grass is abundant and free as the air we breathe, it is far different. The sheep should be turned out as soon as there is any grass to be seen and the weather fine. They will start out in the morning, and long before night comes will have filled themselves. They are very close picking animals, and would get fat on the prairie where others would starve. Give them ample grazing room, allowing them all the range convenient.

Turn out early in the morning through the summer, the herder following until dark.

He should not be allowed to worry them with dogs, or needlessly huddle them together to get at some orchard or melon patch or to attend some house where there may be some other kind of magnet to attract him. Allow the sheep plenty of shade during the hottest part of the day.

Shade-trees are of great advantage to them, and every good shepherd will plant some in all permanent pastures, and also on the prairie; for this purpose cottonwood answers as well as any, and is surest and swiftest of growth. Let them have all the water they need, allowing them the privilege of going to it three or four times a day.

Feed salt at the rate of 40 or 50 pounds to the thousand per week. If the sheep are fed regularly the same day each week they will soon learn to give the shepherd notice should he fail to feed them at the appointed time.

Unless the sheep are kept in good condition they will be troubled more or less from ticks. It is impossible for an animal thus affected to produce a good fleece. A sure preventive is to feed sulphur mixed with salt at the rate of one part of the former to twenty of the latter. Feed them this every two or three weeks. It will not only prevent ticks, but will keep the sheep healthy and free from disease.

LAMBING SEASON.

The lambing season requires more care and skill than any other time of the year. It needs attention, not only in the day but during the night also.

When the lambs are to drop on the range they should not come before the grass has a good start, and when there is no danger from snow storms—say about the first of May.

It will be found of great advantage, however, to have a pasture of tame grasses near the sheds to turn the ewes and lambs in at yeaning time. Being thus prepared, one can have his lambs come much earlier. There is a great advantage in this: the lambs are well prepared for winter; they have heavier fleeces at first shearing; will make stronger, healthier, and larger sheep at maturity. The lambs will require much more care on the prairie, if they get the care they ought to have, and there will be more danger of losing them. When 30 or 40 drop in a day it is much trouble to get them in the fold at night, or at the approach of a storm. During the process of folding the lambs will become separated from the ewes, the latter will run about bleating for their young, and a scene of wild confusion follows. Both ewes and lambs become frightened, the lambs get run over, and the ewes never recognizing their offspring again. The pasture and little extra feed may cost a little more, but it will pay to use them. Keep the ewes in the shed when they are about to lamb, and as soon as they have yeaned turn them into the pasture if fine. Be careful that the lambs suck, especially if the weather is cold, else they will become chilled and soon die. If a lamb is found chilled, and too weak to suck, take it to a fire and give it warm milk mixed with a stimulant, as whiskey. Should a ewe disown her lamb, put her in a small pen, and force her to let it suck, repeating until she will do it with pleasure. When a ewe loses her lamb give her one from a ewe that has but little milk, turns or any other impediment to milking. A lamb that gets up and sucks is half raised. The

careful shepherd will have a hospital pen, in which he will place all sick ewes and lambs. To this he will devote more time than to the others.

Docking and castrating should be performed when the lambs are three to five weeks old. Have the lambs separated from the ewes, and placed in a pen by themselves. A cool day is best for the operation, commencing early in the morning. If the flock is large it will pay to have plenty of help—say six to eight men. The shepherd and also the docker will each need an assistant, besides three or four men to catch. The shepherd generally does the castrating, while the assistant takes the lambs from him and docks them. The butts should be all left the same length, about two inches long.

WASHING.

Sheep-washing is a practice that ought to be abolished, and is by the majority of our wool-growers. Those, however, who wish to continue this unhealthy system will find convenient places in nearly all our creeks; although there is seldom fall enough to make a desirable tank. If one could have such a place it would be a good convenience to him. He could then have permanent pens handy and be always ready for the operation.

The practice of many is to have a corral near the water, opening into a smaller one on the brink of the stream. Putting from the larger into the smaller all the latter will hold, two men will catch the sheep, and five or six at the water will receive them.

They are soused into the water three or four times, and afterwards squeezed by the hands of the operators. A better plan would be to put the sheep in the water, and saturate the fleece, after which they are taken ashore. When they commence steaming they are again led into the water and washed clean.

But every man will perhaps invent some method for himself, suitable to his particular situation and circumstance.

Six or eight men will be able to wash a thousand a day. Warm weather is indispensable to washing with safety to the general health of the sheep.

SHEARING.

The manner of shearing varies in every district, and as this is an art that must be acquired under a teacher I shall not enter into minor details.

First clip off all the tags and dirt if any remains; then take off the fleece, and spread it, with the outside uppermost, on a clean platform; push the wool firmly together to render it compact; double the sides over to the centre; throw the loose lock over to the middle, and roll together from one end. Boys might do this work, for it requires more skill than strength. It will require no rough handling to keep the sheep "on end," which is the best way, and prevents tearing the fleece.

Learners must be content to shear a few at the first, until they have become proficient in the operation.

As each sheep is put from the floor it should be branded with the owner's initials; and the old culls might receive another mark besides. Don't shear too close; it will only give a chance for cold and sun-burn, and there will be so much less wool the next year.

If wounds are made during shearing, apply a mixture of tar and grease.

CAUSES OF FAILURE.

I have made many inquiries among those who have undertaken sheep-raising in this state, and who have given it up, as to the cause of their so doing. But in every instance I have found the cause of failure, if they did fail, rested with themselves. I have met a few men who are down on the sheep business as not adapted

to Nebraska. I will cite an instance. A friend of mine bought about a thousand head of sheep in the summer of 1863, at a time when the price of wool and sheep was very high, and when the sheep mania was at its highest. He bought anything he could get that had the form of a sheep—being a hard matter to get them at any price—and had to go in debt to pay for part of them. When winter set in he found he had twice as many as he should have had for the accommodations he had for them. Added to this he had never handled sheep before, so knew nothing of their practical management; nearly half the sheep were diseased. Not having saved hay enough, he had to buy and haul it ten miles; and finally they kept dying off, one by one, till the next summer he found he had just half he bought, and yet had sold none. Those that were left he sold at half their original cost, the price having come down very much. Need I say that he is disgusted with sheep-raising? I would as soon have pleaded the cause of slavery to John Brown as to advocate the cause of sheep-husbandry with the person cited. Yet his is not the only case. Throughout Iowa, Illinois, and Nebraska everybody at that time was crazy to go into the sheep business as being the easiest way of making a fortune. But when mutton and wool came down in 1864 and 1865, so many having gone into the business, everybody wanted to get out of it. I consider the sheep mania of 1863 to have done more damage to sheep-husbandry here than all the faults that can be found of the state and climate. One of the causes of failure, and perhaps the greatest, is lack of knowledge in management.

In a conversation with Mr. George Ballantine, of Ballantine Bros., at present perhaps the largest sheep-raisers in the state, he said that last year they lost four thousand dollars' worth of sheep through lack of knowledge in their management. It was their first year in the business, and as they were told that it would require nothing but the native grasses to winter their sheep, they made no preparation for winter.

But they found out to their cost that it does take more than grass to winter a flock of sheep, and this year they made the nec-

essary preparations, and as yet have lost but eight during the summer and winter out of two thousand five hundred. Many would have given up in disgust at such loss in the start, but they have stuck to it, and are now very enthusiastic over their present prospect in the business. Their fleeces averaged over five pounds each last year. This is not theory, but practice.

To be successful, then, a person should go into the business when he is ready—not wait till prices are high; to persevere in times of depression in prices, and at all times, with a steady determination to succeed; to commence with a few and increase them as his experience and accommodations increase; to get a good kind, and attend to them well.

I know it is a great drawback to many because they are not so situated as to be able to get a flock large enough so that it would pay to keep a herder, and have no pasture fenced to keep a smaller number. To avoid which my plan would be this: In a grange or neighborhood where a few have a little money to invest in the business, let a company be organized. If there are not more than two or three to go into the arrangement it makes no difference, although the flock ought not to be less than five hundred—a thousand or fifteen hundred would be better. Then let the company send one of their number to select the required number of sheep, which will be divided among the parties according to the capital each one has invested. Let each mark his sheep with the owner's initials, and each one will then have his share, and be the sufferer if his should die. The company will chose a shepherd for the summer, who shall have the sole management, and be paid by the company. In the fall each owner will take his own sheep and winter them. Will not some of our granges take up this matter?

Drawing this article to a close, in which I have not tried to exhaust any of the subjects treated, I give it as my earnest belief that if any one enters the field I have recommended he will find no obstacle to profitable results but which can be easily overcome. "Wherever the hoof of the sheep touches, the land is turned into

gold," is an old Spanish proverb, and we have the land for him who will bring the "golden hoof" and make his fortune.

As there is no good rural picture without the presence of a flock of sheep, neither is there a complete farm without the same appendage. Let our pretty western farms be enlivened and graced with the scene—

> Where sits the shepherd on the grassy turf,
> Inhaling, healthful, the descending sun,
> Around him his many bleating flock,
> Of various cadence; and his sportive lambs
> This way and that convulsed in sportive glee,
> Their frolics play.